Cairngorms National Park Local Development Plan

Main Issues Report - Background Evidence

5. Site Analysis - Part 2

Appendix 1 - Habitats Surveys

Main Issues Report - Background Evidence
5. Site Analysis

This is one of five Background Evidence Reports that have informed the Cairngorms National Park Main Issues Report. These reports look at:

1 Housing and population – sets out the rationale for the new housing requirements identified in the Main Issues Report. It looks at how the population of the Park is expected to change and considers the impact this may have on the future number and types of households in the Park. It also summarises the Housing Need Demand Assessments produced by the Local Housing Authorities and identifies the housing land supply.

2 The economy – sets out the rationale for the new employment land identified in the LDP. It looks at the evidence which exists, the demand information gathered as part of a study commissioned to support the LDP and any available information published by the Local Authorities.

3 Monitoring report – an assessment of progress on the implementation of the adopted Local Plan (October 2010).

4 Other information – summary of other information which has informed the development of the Main Issues Report.

5 Site analysis – an assessment of potential development sites submitted by landowners, developers and agents as part of the CNPA 'Call for Sites' process.

These reports set out the rationale for the approach taken in the Main Issues Report on the various topics. They provide detail not contained within the Main Issues Report, and should be read together with the Main Issues Report to get a full picture.

MIR/11/05 - Part 2

Cairngorms National Park
Main Issues Report Consultation
Monday 19 September – Friday 9 December 2011

Any comments or responses to the content of these reports should be included within your consultation response on that part of the Main Issues Report and should not form a separate comment or response. Comment forms, and copies of all the Main Issues Report documents, are available from the CNPA offices or online at **www.cairngorms.co.uk**

Responses should be sent to:
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FREEPOST NAT 21454
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Cairngorms National Park Authority

LOCAL DEVELOPMENT PLAN PHASE 1 HABITAT SURVEYS:

Boat of Garten, Carrbridge, Cromdale, Drumuillie, Dulnainbridge, Grantown of Spey & Nethybridge

November 2010

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1. INTRODUCTION

1.1 Remit

EnviroCentre were commissioned by the Cairngorms National Park Authority to undertake a series of Phase 1 Habitat Surveys of potential development sites submitted for approval as part of the Local Development Plan (LDP). This report presents the findings of those surveys.

1.2 Aim and objectives

The **aim** of the survey and reporting is to identify, classify and describe the nature of the habitats present within each of the LDP sites.

The **objectives** are therefore to:

- Provide a habitat map;
- Provide a plant species list and the details of notable plant taxa;
- Determine the potential presence and activity of protected faunal species;
- Assess the conservation value of the habitats;
- Identify any potential constraints to the development of the site; and
- Make recommendations for any further surveys.

In addition, a further objective is to provide a desk-based assessment of the presence of any designated sites within a 5km radius of the sites and of any notable fauna or flora that may be present on the sites.

2. METHOD

2.1 Desk study

A search was conducted of the appropriate sources[1], within a 5.0km radius from the site, for existing information on:

- Statutorily designated sites i.e. Special Protection Areas (SPA), Special Areas of Conservation (SAC) and Sites Special of Scientific Interest (SSSI);
- Non-statutorily designated sites e.g. Ancient Woodland Inventory, Local Nature Reserves and Sites of Importance for Nature Conservation;
- Legally protected or notable species, e.g. the presence of bat roosts or badgers; and,
- UK and Cairngorms Local Biodiversity Action Plan Priority habitats and species.

The results of the desk study identify if the development will impact upon any designated areas or notable or protected species; inform the field survey; and provide information to guide actions and priorities for ecological mitigation and enhancement.

2.2 Phase 1 Habitat Survey

An Extended Phase 1 Habitat survey was undertaken in order to determine the nature of the habitats present that may be affected by the proposed development and to enable the identification of suitable habitats for any protected species. An Extended Phase 1 Habitat survey is not designed to produce comprehensive evidence of protected species' presence but by identifying suitable habitats and direct or indirect signs of activity (such as droppings or prints), it does highlight where further surveys may be required for a more complete understanding of the site's ecology.

The objectives of the field survey and subsequent reporting are to:

1. produce a map of habitats for the site including a buffer zone of up to 500m;
2. 'target note' specific features of interest within the site;
3. obtain initial records of species of flora and fauna occurring within those habitats identified within the site boundary;
4. make an initial assessment of the presence or likely absence of species of conservation concern;
5. identify any potential legal and policy constraints relevant to the species and habitats found which may affect the development; and
6. evaluate the nature conservation value of the habitats on the site.

The set of Target Notes are included in Appendix B - these notes locate and describe specific features of ecological interest. A hand-held, Garmin GPS unit was used to locate each of these features on the national grid system. Their location is mapped in Figure 1 and they are described in Appendix B.

[1] For the presence of designated sites, SNHi (www.snh.org.uk/snhi) and the Local Plan (www.scotborders.gov.uk) were consulted. The National Biodiversity Network Gateway was consulted for species records.

The Phase 1 Habitat survey and assessment respectively follow the Joint Nature Conservation Committee[2] and Institute of Ecology and Environmental Management guidelines[3].

Quantification of plant abundance

The DAFOR scale (Dominant > Abundant > Frequent > Occasional > Rare) is used throughout the report to express the cover of individual species in specified areas and/or vegetation units. Accordingly, such expressions of abundance relate only to the presence of the species within the site unless another geographical context is explicitly stated.

Nomenclature

Vernacular names are used throughout the report for the higher plants and these can be cross-referenced to the scientific name by reference to the species list compiled for the site that is included in Appendix B. Scientific names only are used for the moss and liverwort species because although vernacular names are now in existence, they are not in general usage. The standard floras for each of the major plant groups are used within the report[4].

[2] Joint Nature Conservation Committee 2003 Handbook for Phase 1 habitat survey. Revised reprint.
[3] Institute of Ecology and Environmental Management Undated. General advice on surveys and methods. Available online at: http://www.ieem.net/surveymethods.asp.
[4] Stace, C.A. 1997 New Flora of the British Isles. 2nd edition. Cambridge University Press, for higher plants; Smith, A.J.E. 2004 The moss flora of Britain and Ireland. 2nd edition. Cambridge University Press, for mosses; and Paton, J..A. 1999 The liverwort flora of the British Isles. Harley Books, Colchester, for liverworts..

3. RESULTS

3.1 Desk-based Study

3.1.1 Designated sites

Numerous designations are present in the area around the LDP sites along the Spey Valley. These include designation of the Cairngorms National Park and National Scenic Area as well as designations for nature conservation such as Sites of Special Scientific Interest, Special Areas of Conservation and Special Protection Areas. Only the statutory designations for nature conservation are considered in the tabulated data below. The distance from the designated site to the most proximal LDP site associated with the conurbations indicated below (in the table captions) is indicated in the appropriate column. The tables are arranged alphabetically by the name of the conurbation.

Table 1: Designated sites located within 5km of the Boat of Garten LDP sites (Sites 12h, 12j, 12k and 017). Distance measured from the closest LDP site

Site	Designation	Distance & Orientation	Designated Features
Statutorily designated sites			
River Spey	SSSI & SAC	0.4 km; E	**SSSI** • Atlantic salmon (*Salmo salar*) • Freshwater pearl mussel (*Margaritifera margaritifera*) • Otter (*Lutra lutra*) • Sea lamprey (*Petromyzon marinus*) **SAC** • Atlantic salmon (*Salmo salar*) • Freshwater pearl mussel (*Margaritifera margaritifera*) • Otter (*Lutra lutra*) • Sea lamprey (*Petromyzon marinus*)
Abernethy Forest	NNR, SSSI & SAC	1.1 km; SE	**SSSI** • Basin fen • Beetle assemblage • Breeding bird assemblage • Capercaillie (*Tetrao urogallus*), breeding • Crested tit (*Lophophanes cristatus*), breeding • Dragonfly assemblage • Fluvial Geomorphology of Scotland • Fungi assemblage • Invertebrate assemblage • Lichen assemblage **SAC** • Capercaillie (*Tetrao urogallus*), breeding • Osprey (*Pandion haliaetus*), breeding • Scottish crossbill (*Loxia scotica*), breeding

Cairngorms	SAC	1.1 km; SE	• Acid peat-stained lakes and ponds • Acidic scree • Alpine and subalpine heaths • Blanket bog • Bog woodland • Caledonian forest • Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels • Dry grasslands and scrublands on chalk or limestone • Dry heaths • Green shield-moss (*Buxbaumia viridis*)
Loch Vaa	SSSI & SAC	2.3 km; W	**SSSI** • Beetles • Goldeneye (*Bucephala clangula*), breeding • Slavonian grebe (*Podiceps auritus*), breeding **SAC** • Slavonian grebe (*Podiceps auritus*), breeding
Kinveachy Forest	SSSI, SAC & SPA	3.5km; W	**SSSI** • Breeding bird assemblage • Native pinewood **SAC** • Bog woodland • Caledonian forest Slavonian grebe (*Podiceps auritus*), breeding **SPA** • Capercaillie (*Tetrao urogallus*), breeding • Scottish crossbill (*Loxia scotica*), breeding

Table 2: Designated sites located within 5km of the Carrbridge LDP sites (Sites22 and 25). Distance measured from the closest LDP site

Site	Designation	Distance & Orientation	Designated Features
Statutorily designated sites			
River Spey	SAC	0.1 km; N	• See Table 1 (SAC features only).
Kinveachy Forest	SSSI, SAC & SPA	2.6 km; SW	• See Table 1.
Loch Vaa	SSSI & SAC	5.1 km; S	• See Table 1.

Table 3: Designated sites located within 5km of the Cromdale LDP sites (Sites 29a & 29b). Distance measured from the closest LDP site

Site	Designation	Distance & Orientation	Designated Features
Statutorily designated sites			
River Spey	SAC	0.0 km; E	• See Table 1 (SAC features only).
Anagach Woods	SPA	0.9 km; W	• Capercaillie (*Tetrao urogallus*)

Table 4: Designated sites located within 5km of the Drumuillie LDP site (Site 002)

Site	Designation	Distance & Orientation	Designated Features
Statutorily designated sites			
River Spey	SSSI &SAC	0.5 km; S	• See Table 1.
Abernethy Forest	NNR, SSSI & SAC	1.1 km; S	• See Table 1.
Cairngorms	SAC	1.1 km; S	• See Table 1.
Loch Vaa	SSSI & SAC	4.1 km; SW	• See Table 1.
Kinveachy Forest	SSSI, SAC & SPA	5.0 km; W	• See Table 1.

Table 5: Designated sites located within 5km of the Dulnain Bridge LDP sites (Sites 12a, 12i, 34a, 34b, 34c and 34d). Distance measured from the closest LDP site

Site	Designation	Distance & Orientation	Designated Features
River Spey	SAC	0.1 km; N	• See Table 1 (SAC features only).
Kinveachy Forest	SSSI, SAC & SPA	2.6 km; SW	• See Table 1.
Loch Vaa	SSSI & SAC	5.0 km; S	• See Table 1.

Table 6: Designated sites located within 5km of the Grantown on Spey LDP sites (Sites 12h, 12j, 12k, 017). Distance measured from the closest LDP site

Site	Designation	Distance & Orientation	Designated Features
Anagach Woods	SPA	0.9 km; SE	• Capercaillie (*Tetrao urogallus*)
River Spey	SSSI &SAC	1.4 km; S	• See Table 1.
Craigmore Wood	SPA	4.2 km; S	• Capercaillie (*Tetrao urogallus*)

Table 7: Designated sites located within 5km of the Nethybridge LDP sites (003a, 12b, 12c and 23). Distance measured from the closest LDP site

Site	Designation	Distance & Orientation	Designated Features
River Spey	SSSI &SAC	0.1 km; S	• See Table 1.
Abernethy Forest	NNR, SSSI & SAC	0.1 km; S	• See Table 1.
Cairngorms	SAC	0.1 km; S	• See Table 1.
Craigmore Wood	SPA	1.2 km; E	• Capercaillie (*Tetrao urogallus*)

3.1.2 Notable species

The following table of notable species has been compiled from the JNCC collation of taxon designations[5] data available from the National Biodiversity Network Gateway[6] for the OS grid squares NH91, NH 92, NJ02 and NJ13 in which the Speyside LDP sites are located. Species

[5] Refer to http://www.jncc.gov.uk/page-3408 for further details. Accessed November, 2010.
[6] Refer to www.nbn.org.uk for further details. Accessed November 2010.

that are not likely to be encountered in the lowland setting of the LDP sites have been excluded (i.e. those that are purely montane or alpine in their distribution).

Table 8: Notable fauna and flora recorded from the 10km grid squares (NH91, NH 92, NJ02 and NJ13) in which the Speyside LDP sites are located

Notable Flora	Notable Fauna
Annual Knawel (*Scleranthus annuus* subsp. *annuus*)	European Water Vole (*Arvicola amphibius*)
Annual Knawel (*Scleranthus annuus*)	Roe Deer (*Capreolus capreolus*)
Arctic Eyebright (*Euphrasia arctica* subsp. *borealis*)	Red Deer (*Cervus elaphus*)
Baltic Rush (*Juncus balticus*)	West European Hedgehog (*Erinaceus europaeus*)
Bearberry (*Arctostaphylos uva-ursi*)	Wildcat (*Felis silvestris*)
Bird's-nest Orchid (*Neottia nidus-avis*)	Brown Hare (*Lepus europaeus*)
Black-bindweed (*Fallopia convolvulus*)	Mountain Hare (*Lepus timidus*)
Black-grass (*Alopecurus myosuroides*)	European Otter (*Lutra lutra*)
Bluebell (*Hyacinthoides non-scripta*)	Pine Marten (*Martes martes*)
Bog Hair-grass (*Deschampsia setacea*)	Eurasian Badger (*Meles meles*)
Bog Orchid (*Hammarbya paludosa*)	Polecat (*Mustela putorius*)
Bogbean (*Menyanthes trifoliata*)	Daubenton's Bat (*Myotis daubentonii*)
Box (*Buxus sempervirens*)	Natterer's Bat (*Myotis nattereri*)
Caraway (*Carum carvi*)	Pipistrelle (*Pipistrellus pipistrellus sensu lato*)
Charlock (*Sinapis arvensis*)	Common Pipistrelle (*Pipistrellus pipistrellus sensu stricto*)
Chicory (*Cichorium intybus*)	Soprano Pipistrelle (*Pipistrellus pygmaeus*)
Cloudberry (*Rubus chamaemorus*)	Brown Long-eared Bat (*Plecotus auritus*)
Common Gromwell (*Lithospermum officinale*)	Eurasian Red Squirrel (*Sciurus vulgaris*)
Common Slender Eyebright (*Euphrasia micrantha*)	
Coralroot Orchid (*Corallorhiza trifida*)	
Corn Chamomile (*Anthemis arvensis*)	
Corn Mint (*Mentha arvensis*)	
Cornflower (*Centaurea cyanus*)	
Cowslip (*Primula veris*)	
Downy Currant (*Ribes spicatum*)	
Dwarf Birch (*Betula nana*)	
Dwarf Cornel (*Cornus suecica*)	
Dwarf Cudweed (*Gnaphalium supinum*)	
Dwarf Elder (*Sambucus ebulus*)	
Few-flowered Sedge (*Carex pauciflora*)	
Field Gentian (*Gentianella campestris*)	
Field Gromwell (*Lithospermum arvense*)	
Field Woundwort (*Stachys arvensis*)	
Fly Honeysuckle (*Lonicera xylosteum*)	
Fragrant Orchid (*Gymnadenia conopsea*)	
Frog Orchid (*Coeloglossum viride*)	
Globeflower (*Trollius europaeus*)	
Good-King-Henry (*Chenopodium bonus-henricus*)	
Great Sundew (*Drosera anglica*)	
Greater Butterfly-orchid (*Platanthera chlorantha*)	
Greater Celandine (*Chelidonium majus*)	
Greater Knapweed (*Centaurea scabiosa*)	

Greater Yellow-rattle (*Rhinanthus angustifolius*) Hairy Stonecrop (*Sedum villosum*) Harebell (*Campanula rotundifolia*) Heath Cudweed (*Gnaphalium sylvaticum*) Heath Dog-violet (*Viola canina*) Heather (*Calluna vulgaris*) Henbane (*Hyoscyamus niger*) Intermediate Wintergreen (*Pyrola media*) Jacob's-ladder (*Polemonium caeruleum*) Least Water-lily (*Nuphar pumila*) Lesser Butterfly-orchid (*Platanthera bifolia*) Lesser spearwort (*Ranunculus flammula subsp. scoticus*) Little Kneeling Eyebright (*Euphrasia confusa*) Long-stalked Crane's-bill (*Geranium columbinum*) Long-stalked Pondweed (*Potamogeton praelongus*) Maiden Pink (*Dianthus deltoides*) Masterwort (*Peucedanum ostruthium*) Meadow Saffron (*Colchicum autumnale*) Melancholy Thistle (*Cirsium heterophyllum*) Monk's-rhubarb (*Rumex alpinus*) Moschatel (*Adoxa moschatellina)* Northern Yellow-cress (*Rorippa islandica*) One-flowered Wintergreen (*Moneses uniflora*) Petty Whin (*Genista anglica*) Prickly Poppy (*Papaver argemone*) Primrose (*Primula vulgaris*) Purple Ramping-fumitory (*Fumaria purpurea*) River Water-crowfoot (*Ranunculus fluitans*) *Pyrola rotundifolia subsp. rotundifolia* Scarlet Pimpernel (*Anagallis arvensis*) Serrated Wintergreen (*Orthilia secunda*) Shepherd's Cress (*Teesdalia nudicaulis)* Shrubby Cinquefoil (*Potentilla fruticosa*) Small Cow-wheat (*Melampyrum sylvaticum*) Small Cranberry (*Vaccinium microcarpum*) Small-flowered Catchfly (*Silene gallica*) Small-white Orchid (*Pseudorchis albida*) Spignel (*Meum athamanticum*) Sun Spurge (*Euphorbia helioscopia*) *Trichophorum cespitosum* subsp. *cespitosum* Twinflower (*Linnaea borealis*) *Veronica serpyllifolia* subsp. *humifusa* *Viola canina* subsp. *canina* *Viola tricolor* subsp. *tricolor*) Welsh Poppy (*Meconopsis cambrica*) Wild Pansy (*Viola tricolor*) Wood Crane's-bill (*Geranium sylvaticum*) Yellow Saxifrage (*Saxifraga aizoides*) Yellow-rattle (*Rhinanthus minor subsp. monticola*)	

3.2 Field Study

3.2.1 Site 002

3.2.1.1 Notable species

Juniper and summer bat roost potential.

3.2.1.2 General description

This site slopes from higher ground in the west that supports birch woodland and a stand of bracken, to lower, less well-drained ground in a slight depression that supports wet heath and peripherally: acid grassland and a mosaic of dry and wet heath.

Table 9: Habitats recorded within the Site 002 boundary: their JNCC code; title; and relative and absolute areas

Habitat Code	Habitat Title	Area (ha)	Area (%)
A1.1.1	Woodland, broad-leaved, semi-natural	2.5	37.9
B1.2	Acid grassland, semi-improved	0.3	4.6
C1.1	Continuous bracken	0.1	1.5
D1.1	Acid, dry dwarf shrub heath	0.3	4.5
D2	Wet dwarf shrub heath	3.4	51.5
	Totals	**6.6**	**100.0**

3.2.1.3 Woodland, broad-leaved, semi-natural

The broad-leaved tree canopy is dominated almost exclusively by birches, with frequent juniper (a Cairngorms and UK BAP species) and occasional broom forming a well-developed shrub layer. Rowan and Scot's pine are the only other tree species recorded occasionally within the woodland. Eared and grey willow are rarely present in the shrub layer in association with the broom and juniper.

The field layer is rather variable with wetter parts containing small areas of wet heath habitat that is dominated by purple moor-grass. In drier situations, common bent and sweet vernal grass are abundant with frequent to occasional: common mouse-ear, creeping bent, devil's-bit scabious, dog violet, field woodrush, germander speedwell, heath bedstraw, pignut, Tormentil, tufted hair-grass, wavy hair-grass, wood horsetail, yarrow and Yorkshire fog.

The mosses *Hypnum cupressiforme*, *Rhytidiadelphus squarrosus* and *Rhytidiadelphus triquetrus* form the bulk of the moss layer. Epiphytic species are rare on the birches and only *Dicranum fuscescens*, *D. scoparium*, *Hypnum andoi, Orthotrichum affine* and *Ulota crispa* were recorded, on an occasional basis.

Dead wood is infrequent in the woodland and generally limited to smaller boughs and branches that have fallen recently. Despite the relatively damp conditions that prevail towards the lower parts of the woodland there are no bryophytes distinctive of the habitat.

3.2.1.4 Acid grassland, semi-improved

The acid grassland is maintained in an improved condition by the grazing of roe deer and potentially, in the past, by livestock. It has also been beneath woodland at some point in the past as evidenced by the presence of the stumps of mature trees between 30cm and 60 cm in diameter.

Mat grass is dominant with a moderately rich assemble of frequent to occasional associates: black sedge, carnation grass, devil's-bit scabious, heath rush, dog violet, field woodrush, pignut, red fescue, smooth meadow-grass, ragwort, soft rush, sorrel, sweet vernal-grass, tormentil, tufted hair-grass, wavy hair-grass, yarrow and Yorkshire fog; and rare shrubs: broom, eared willow and juniper. The moss layer has abundant *Rhytidiadelphus squarrosus* with occasional *Brachythecium rutabulum*.

3.2.1.5 Continuous bracken

The continuous bracken overtops a field layer that is of low cover and diversity due to the intensity of the litter and shade of the bracken canopy.

3.2.1.6 Dry dwarf shrub heath

Refer to Target Note 1 for details on the small areas of dry heath present on the site.

3.2.1.7 Wet dwarf shrub heath

Bog myrtle dominates the wet heath habitat and it forms a dense, continuous canopy across almost all of its extent (in the lower parts of the site). In addition to an assemblage of species derived from the habitats described above in the drier parts of the wet heath, there are a number of species that occur exclusively within this habitat: including frequent to occasional: black sedge, carnation grass, deer grass, marsh violet, soft rush, star sedge, velvet bent and tufted hair-grass in a species-poor assemblage. Distinctive mosses include *Sphagnum mucronatum*, *S. palustre*, and *S. subnitens*. Downy birch, eared and grey willows also occur sporadically across the wet heath habitat.

3.2.2 Site 3a

3.2.2.1 Notable species

None.

3.2.2.2 General description

This area of woodland on the south-eastern boundary of Nethybridge includes coniferous plantation as well as mixed, semi-natural woodland. A number of drains also ramify through this area.

Table 10: Habitats recorded within the Site 3a boundary: their JNCC code; title; and relative and absolute areas

Habitat Code	Habitat Title	Area (ha)	Area (%)
A1.2.2	Coniferous plantation	8.5	56.7
A1.3.1	Mixed semi natural woodland	6.5	43.3
	Totals	**15**	**100.0**

3.2.2.3 Coniferous plantation

In its driest parts, the field layer beneath the Scot's pines (that dominate the greater part of the plantation canopy) has a very low cover and diversity of herbs. Locally it is dominated exclusively by leaf litter and brash but where the canopy is more open, heather and wavy hair-grass are frequent to locally abundant with occasional to rare: blaeberry, chickweed wintergreen, cowberry, field woodrush, greater woodrush, heath bedstraw, pale sedge. The ground cover in such areas is dominated by *Hylocomium splendens* which is locally abundant throughout the plantation in association with frequent *Hypnum cupressiforme, Rhytidiadelphus triquetrus* and *Sphagnum capillifolium.*

The field layer has a greater cover and diversity in the wetter parts of the site that are immediately apparent from the lush green growth of frequent to occasional: bulbous rush, common bog-cotton, hare's-tail bog-cotton, heath bedstraw, purple moor-grass, soft rush, star sedge, tormentil, tufted hair-grass, velvet bent, wavy hair-grass and white sedge. Birch, rowan and Scot's pine saplings are frequent to locally abundant. The mosses *Polytrichum commune* and *Sphagnum mucronatum* are abundant with frequent to occasional: *Plagiothecium undulatum, Scleropodium purum, S. capillifolium* and *S. subnitens*.

Brash is common across most of the site. Its presence reflects the thinning operations that have been undertaken as well as breakages under the accumulation of snow in the preceding winters. This makes passage through the plantation very difficult in places and discourages recreational use of the area.

3.2.2.4 Mixed semi-natural woodland

Scot's pine dominates the canopy in this habitat type with occasional mature birches that otherwise form an extensive shrub layer and thickets in clearings. The pines are approximately 12-15m tall and the birches between 2-6m tall. In the western lobe, the canopy is much more closed and blaeberry very much dominates the field layer here. The birches and occasional

rowans are significantly more mature than in the east of the site and reach a height of up to 8m.

The field layer is especially distinctive in comparison to the plantation because of the 'grassier' appearance of its field layer. Wavy hair-grass is abundant together with blaeberry and the following species are frequent to occasional: beech fern, common and creeping bents, hard fern, heath bedstraw, male fern, wood sorrel and Yorkshire fog. The moss layer is dominated, as elsewhere on this site, by *Hylocomium splendens* with frequent *Hypnum cupressiforme*, *Rhytidiadelphus loreus* and *R. triquetrus*.

3.2.3 Site 12a

3.2.3.1 Notable species

None.

3.2.3.2 General description

Situated on the western edge of Dulnain Bridge, this site is currently used as pasture for horses and it also contains an area of enclosed, coniferous woodland as well as more scattered Scot's pine. The grassland is semi-improved around the margins and very marshy in the centre of the site to where the surrounding, marginal slopes drain.

Table 11: Habitats recorded within the Site 12a boundary: their JNCC code; title; and relative and absolute areas

Habitat Code	Habitat Title	Area (ha)	Area (%)
A1.2.1	Woodland, coniferous, semi-natural	0.2	15.4
A1.1.2	Woodland, broad-leaved, plantation	<0.1	n.a.
A3.2	Scattered, coniferous trees	n.a.	n.a.
B2.2	Neutral grassland, semi-improved	0.7	53.8
B5	Marshy grassland	0.4	30.8
	Totals	**1.4**	**100**

3.2.3.3 Woodland, coniferous, semi-natural

The small area of Scot's pine woodland indicated by Target Note 1 is enclosed and presumed to not be plantation on the basis of the uneven age structure and spacing of the trees. Scot's pine exclusively dominates the canopy under which there is a well-developed shrub layer including immature specimens of: birch, bird cherry and rowan. The field layer is mostly composed of grasses (creeping soft-bent, sweet vernal grass and Yorkshire fog) as well as a range of woodland and ruderal forbs: angelica, bramble, creeping buttercup, field thistle, dog violet, rowan saplings and tormentil. A narrow, vegetated ditch flows through the centre of this area of woodland and it supports a stand of reed canary-grass.

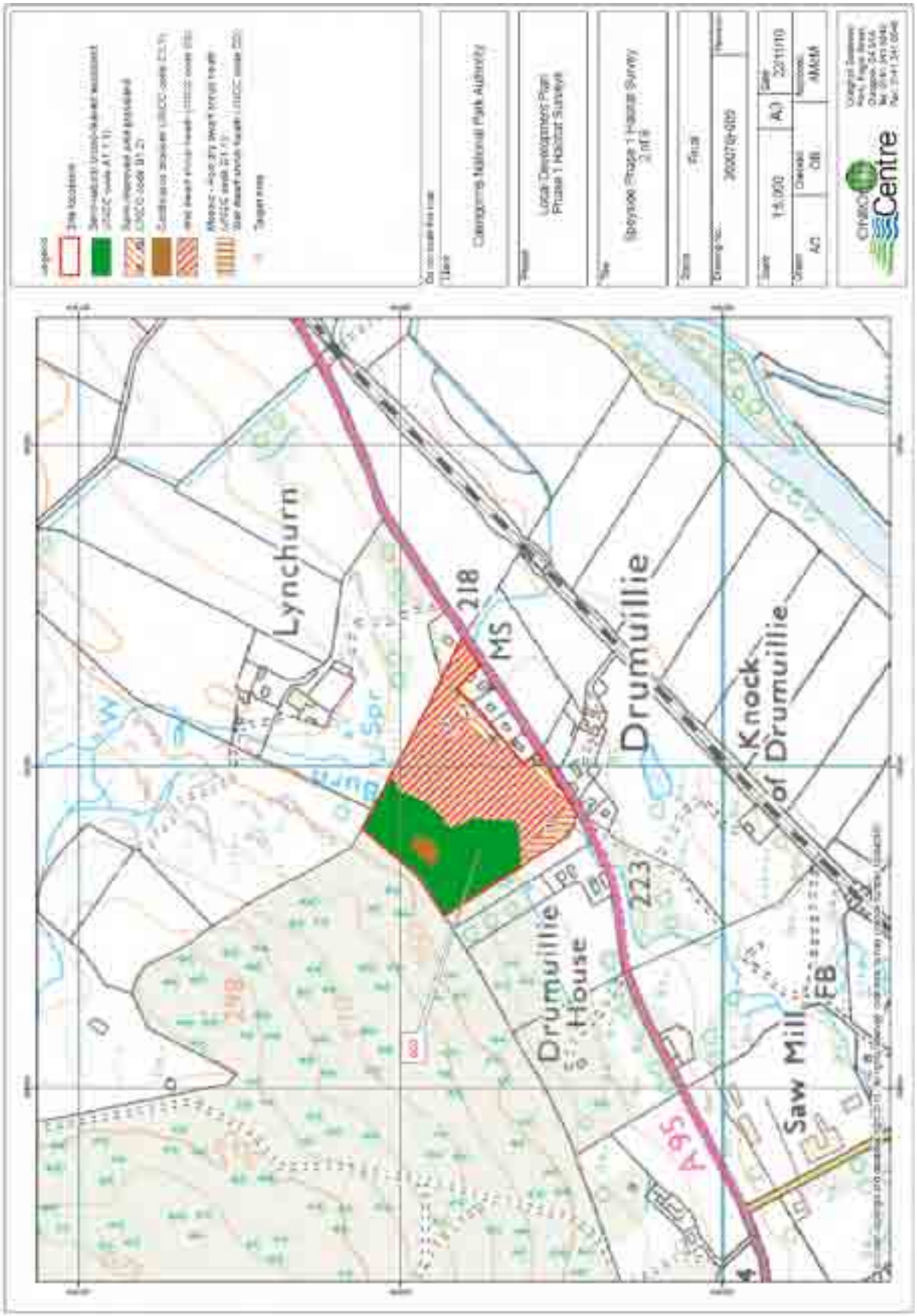


Figure 1: Phase 1 Habitat Map of the Drumuillie site (Site 002).

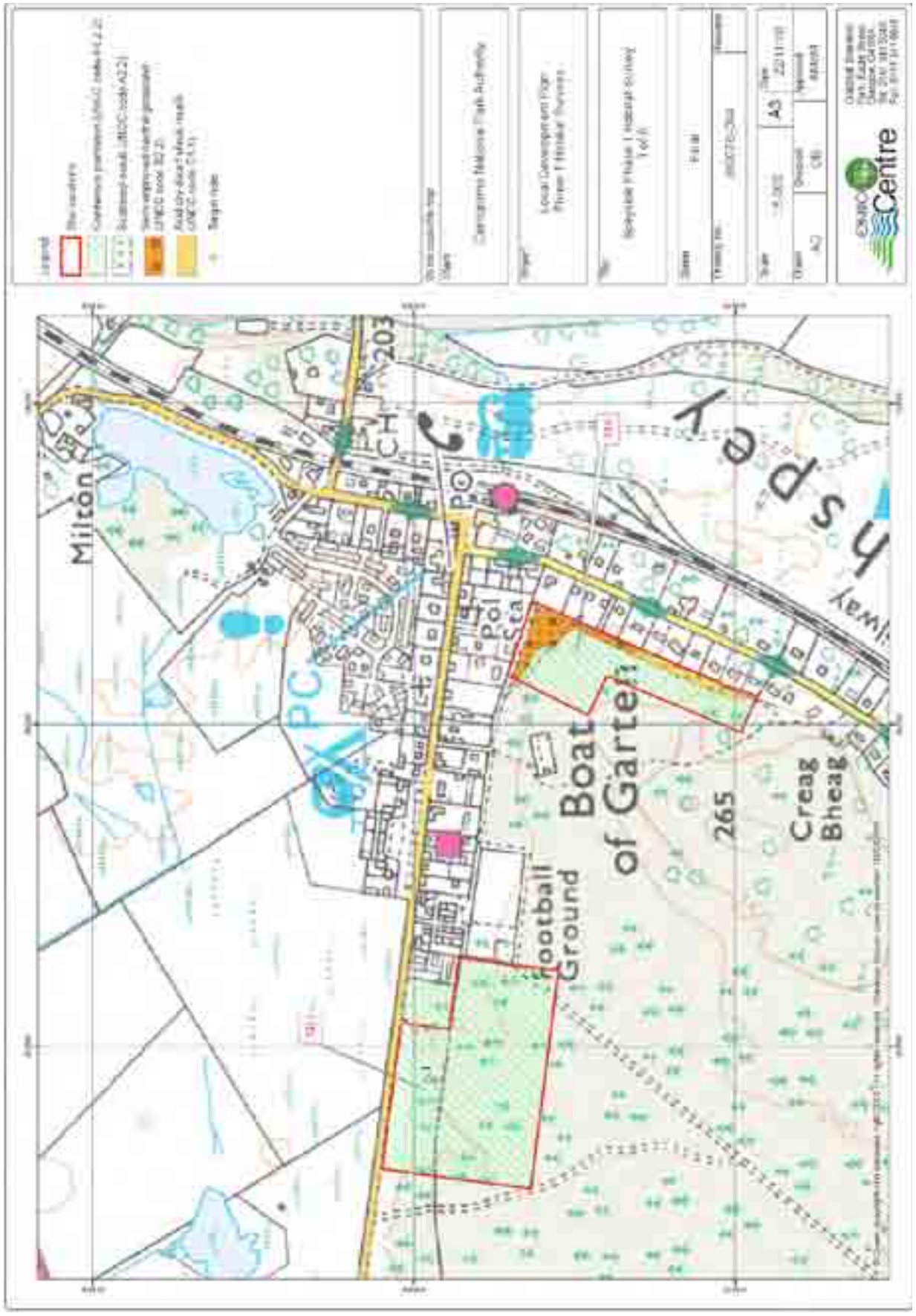


Figure 2: Phase 1 Habitat Map of the Boat of Garten sites (Sites 12h and 12j).

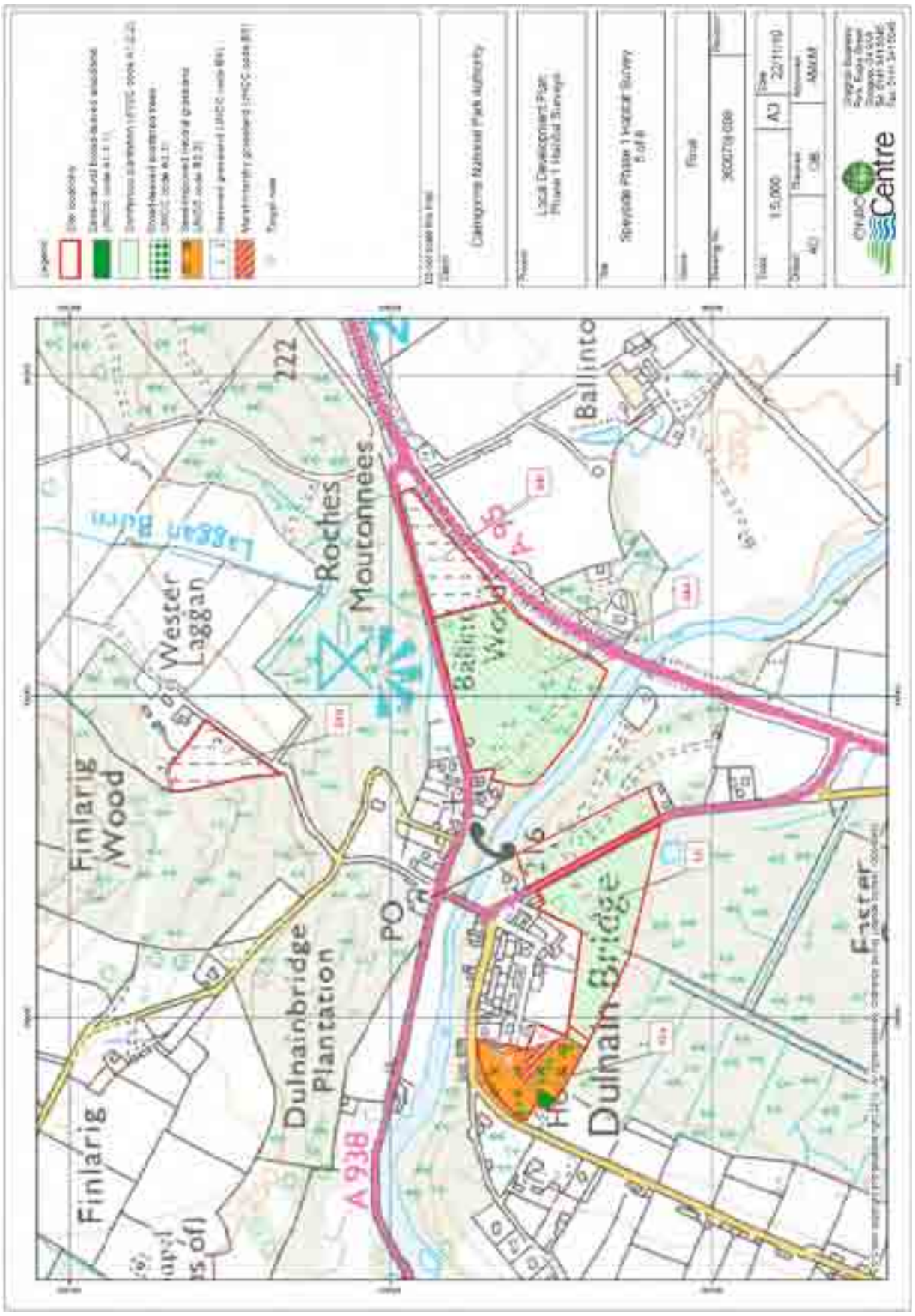
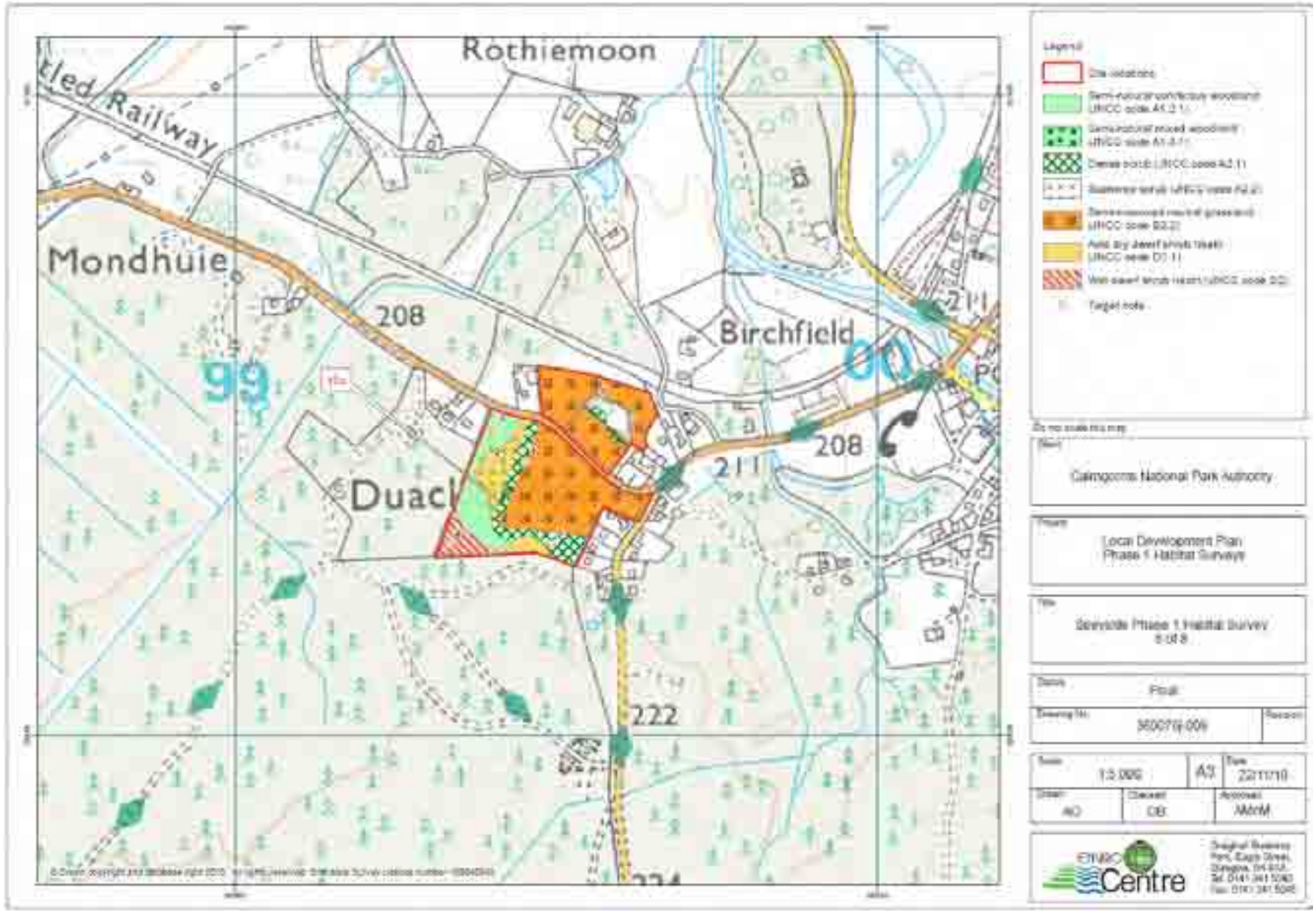


Figure 3: Phase 1 Habitat Map of the Dulnain Bridge sites (Sites 12a, 12i, 34a, 34d and 34i).

Figure 4: Phase 1 Habitat Map of the Duackbridge (Nethybridge) site (Site 12c).



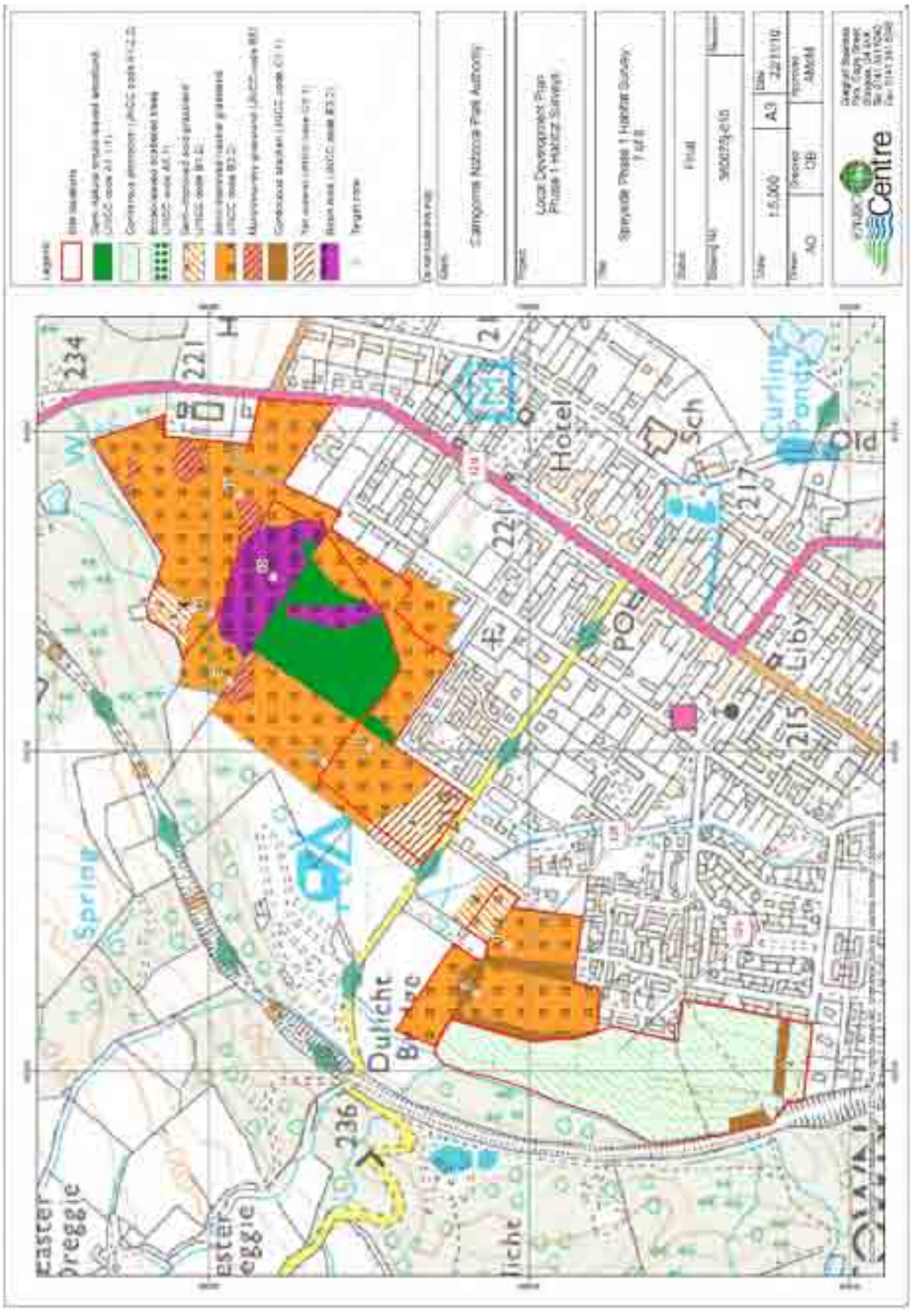


Figure 5: Phase 1 Habitat Map of theGrantown on Spey sites (Sites 12d, 12e and 12f).

3.2.3.4 Scattered, coniferous trees

The scattered trees along the south-western margin of the site are all Scot's pine. The field layer below their open canopy is generally unaffected by their presence and referable to the neutral grassland with occasional elements derived from the marshy grassland flora.

3.2.3.5 Neutral grassland, semi-improved

This habitat occupies the slopes that drain towards the marshy grassland in the south of the site. The sward is closely cropped by horses and is therefore dense and resistant to poaching. Common bent, smooth meadow-grass and Yorkshire fog are all abundant in association with a relatively rich variety of associates including frequent to occasional: autumn hawk's-bit, broad-leaved dock, daisy, devil's-bit scabious, field buttercup, field thistle, greater stitchwort, hoary plantain, ox-eye daisy, ragwort, red clover, ribwort plantain, self-heal, sorrel and yarrow.

3.2.3.6 Marshy grassland

As is the case with the neutral grassland, the sward is grazed by horses and relatively species-rich. Although poaching is evident, the vegetation has proven resistant to erosion.

The flora that persists despite the pressures of intensive grazing is indicative of tall-herb-rich fen vegetation and includes most abundantly: star sedge and sharp-flowered rush as well as frequent to occasional: carnation grass, common yellow sedge, lesser spearwort, marsh arrow-grass, meadowsweet, ragged robin, red clover, marsh thistle, ragged robin, yellow rattle, sweet vernal grass and yarrow. The diversity of the moss layer is low and dominated by *Calliergonella cuspidata* with occasional *Philonotis fontana*.

3.2.4 Site 12b

3.2.4.1 Notable species

Bat roost potential.

3.2.4.2 General description

Located to the west of Nethybridge, this site has a mix of woodland and grassland types including: scattered, broad-leaved trees, coniferous plantation containing a diverse mix of non-native species; marshy grassland and neutral, unimproved grassland.

Table 12: Habitats recorded within the Site 12b boundary: their JNCC code; title; and relative and absolute areas

Habitat Code	Habitat Title	Area (ha)	Area (%)
A1.2.2	Woodland, coniferous, plantation	3.0	60.0
A3.1	Scattered, broad-leaved trees	n.a.	n.a.
B2.1	Neutral grassland, unimproved	1.7	34.0

B5	Marshy grassland	0.3	6.0
	Totals	**5.0**	**100.0**

3.2.4.3 Coniferous plantation

The coniferous plantation includes common, non-native species such as Norway and Sitka spruce as well as others that are much less familiar (to the surveyor at least). They originate because of the previous use of this site as a tree nursery and this explains the regular, close-spacing of the trees that would have been harvested before reaching maturity.

Beneath the canopy of conifers the field layer is almost completely absent because of the dense shade and locally, the accumulation of needles. Consequently, only rare to occasional individuals of the flora found elsewhere on the site are encountered where light penetrates peripherally and beneath the few openings in the canopy.

3.2.4.4 Scattered, broad-leaved trees

Scattered bird cherries up to 4m tall are colonising the indicated areas of open grassland within the west of site.

3.2.4.5 Neutral grassland, unimproved

The neutral grassland is dominated by common bent with abundant sweet vernal-grass. Cock's-foot, common mouse-ear, creeping buttercup, germander speedwell, meadow vetchling, ragwort, red clover, smooth meadow-grass and white clover. *Rhytidiadelphus squarrosus* is abundant beneath the sward of grasses.

3.2.4.6 Marshy grassland

The marshy grassland is ranged along the line of one of the paths that crosses this site. Soft rush is dominant with abundant meadow vetchling and Yorkshire fog. Bird's-foot trefoil, creeping buttercup, field thistle, germander speedwell, sorrel, stinging nettles, ragwort and sweet vernal-grass are frequent to occasional. Grazing appears to be limited to small numbers of roe deer, presumably on account of the frequent recreational use that this site receives, especially by dog walkers.

3.2.5 Site 12c

3.2.5.1 Notable species

Field gentian, heartsease and juniper.

3.2.5.2 General description

Although this site appears to be dominated by grassland from the road, it contains a surprisingly diverse array of habitats in the west including: scrub; dry and wet heath; and coniferous, semi-natural woodland.

Table 13: Habitats recorded within the Site 12c boundary: their JNCC code; title; and relative and absolute areas

Habitat Code	Habitat Title	Area (ha)	Area (%)
A1.2.1	Woodland, coniferous, semi-natural	0.8	13.6
A2.1	Dense, continuous scrub	0.8	13.6
A2.2	Scattered scrub	n.a.	n.a.
B2.2	Neutral grassland, semi-improved	3.5	59.2
D1.1	Acid, dry dwarf shrub heath	0.5	8.5
D2	Wet dwarf shrub heath	0.3	5.1
	Totals	**5.9**	**100.0**

3.2.5.3 Woodland, coniferous, semi-natural

The uneven age, size and spacing of the mature pines is indicative of a semi-natural woodland. The structure is very simple however with a field layer of grass the only layer beneath the canopy that is dominated by Scot's pine. Common bent and Yorkshire fog are abundant in the field layer which includes blaeberry, chickweed wintergreen, common-mouse-ear, heath bedstraw, nettles, ragwort, red fescue, soft rush, wavy hair-grass and wood sorrel as well as the mosses: *Hypnum cupressiforme*, *Rhytidiadelphus triquetrus* and *Scleropodium purum*.

3.2.5.4 Dense, continuous scrub

Dense continuous scrub borders the field in the west (see Target Note 1). It is dominated by juniper (a UK and Cairngorms Biodiversity Action Plan Species) with occasional: birches, broom and Scot's pine saplings. Its has generally developed over dry heath habitat although areas of grassland are also present and there are clumps of stinging nettles where animals have sought shelter. More mature birches and pines are rare and these measure up to 6m in height.

3.2.5.5 Scattered scrub

The scattered scrub is generally dominated by juniper but it includes broom and saplings of birch and Scot's pine. The field layer is that of the habitat in which it is located.

3.2.5.6 Neutral grassland, semi-improved

The grassland across the site has evidently been improved from a more acidic type because of the persistence and local abundance of species associated with acid conditions. However, signs of re-seeding are evident in the presence of perennial rye-grass, timothy and white clover. The sward is dominated however by a abundant common bent and red fescue with frequent to occasional: bird's-foot trefoil, common mouse-ear, crested dog's-tail, daisy, dandelion, eyebright, field buttercup, germander speedwell, heartsease (Near Threatened according to the IUCN 2001 criteria and included on the Scottish Biodiversity List), hoary plantain, ragwort, red clover, ribwort plantain, sweet vernal-grass, yarrow, and Yorkshire fog. Dense stands of field thistle are also present in places. The moss *Rhytidiadelphus squarrosus* dominates the moss

layer and this reflects the grazing management. *Brachythecium rutabulum* and *Kindbergia praelongum* occur occasionally.

A notable component of the neutral grassland flora is field gentian (listed as Vulnerable based on 2001 IUCN guideline and a Priority UK Biodiversity Action Plan Species) which is widespread in the western stand of this habitat. Approximately 70 flowering pikes were counted during the course of the survey.

3.2.5.7 Acid, dry dwarf shrub heath

The proximal presence of taller scrub species and the small area of the dry heath combine to limit the species richness of this habitat. Heather is dominant with abundant *Hylocomium splendens* and *Rhytidiadelphus triquetrus*. Additional species are rare and they include chickweed wintergreen, crowberry and field woodrush as well as rare representatives from the other habitats described for this site. Field gentian is a notable species that occurs in such a manner.

3.2.5.8 Wet dwarf shrub heath

The west dwarf shrub heath forms a mosaic with small elements of dry heath. The latter group of species is dominated by heather with abundant mat grass. Blaeberry, common bent, cowberry, crowberry and juniper are occasionally associated with the foregoing species and the mosses: *Hylocomium splendens*, *Hypnum jutlandicum* and *Leucobryum glaucum*.

The wet heath species are dominated by stands of bog myrtle and purple moor-grass with frequent to occasional: bog asphodel, common bog-cotton, cross-leaved heath, deer grass, heath rush and the mosses: *Sphagnum capillifolium, S. mucronatum, S. papillosum and S. subnitens*.

3.2.6 Sites 12d, 12e and 12f

These three sites are considered together because of their proximity to one another and their contiguity. In addition, the grassland communities are very similar with the same species composition.

3.2.6.1 Notable species

Aspen.

3.2.6.2 General description

The site is quite a complex mosaic of habitat types. Semi-improved neutral grassland used as pasture is the predominant habitat type cross much of the area and there are significant areas of broad-leaved woodland, coniferous plantation and mire. Smaller areas of continuous bracken, marshy grassland and tall ruderal habitat are also present. As well as its use for pasture, the site also receives a significant amount of recreational use as evidenced by the number of worn paths through the grassland.

Table 14: Habitats recorded within the Sites 12d, 12e and 12f boundary: their JNCC code; title; and relative and absolute areas

Habitat Code	Habitat Title	Area (ha)	Area (%)
A1.1.1	Woodland, broad-leaved, semi-natural	3.0	8.4
A1.2.2	Woodland, coniferous, plantation	7.6	21.3
A3.1	Scattered, broad-leaved trees	n.a.	n.a.
B1.2	Acid grassland, semi-improved	0.4	1.1
B2.2	Neutral grassland, semi-improved	19.8	55.6
B5	Marshy grassland	0.5	1.4
C1.1	Continuous bracken	1.0	2.8
C3.1	Tall ruderal	1.1	3.1
E3.2	Basin mire	2.2	6.2
	Totals	**35.6**	**100.0**

3.2.6.3 Woodland, broad-leaved, semi-natural

This habitat is potentially secondary in origin, as surmised from the even age and size of the birch trees that dominate the canopy and the grassy sward beneath that is lacking in a high proportion of distinctive, woodland herbs. The latter observation also suggests that it has been used for grazing in the past. Rowan is occasional in its appearance, either within the canopy or as a scattered shrub layer beneath the more open parts of the canopy. Aspen occurs rarely and is usually accompanied by suckers up to 30cm tall.

Bracken and stinging nettles dominate areas of the woodland floor and the species-poor field layer includes abundant creeping soft-bent and frequent to occasional: cock's-foot, creeping buttercup, germander speedwell, common chickweed, dog violet and wood sorrel.

There is much deadwood but there is no colonisation of this by distinctive species other than *Dicranum scoparium* and *Hypnum andoi* that occur more widely throughout the woodland as epiphytes on standing trees.

3.2.6.4 Woodland, coniferous, plantation

The coniferous plantation in the southwest of the site is not mapped as such in the OS map of the area. However, it is apparent that it has been established over a number of decades. Scot's pine dominates the canopy with occasional birch and rare rowan, the latter sometimes appearing as an understorey in small openings. The density of the canopy suppresses the vegetation beneath so that much of the ground cover is needles, fine brash and bare earth. Otherwise, *Hylocomium splendens* and *Rhytidiadelphus triquetrus* and occasional *Dicranum scoparium* form a discontinuous lawn and in the west, bracken forms dense stands where there is greater light penetration at the margins of the plantation.

Very locally, where there are large openings in the canopy, or marginally, there is a grassy sward with the following species: common bent, devil's-bit scabious, field woodrush, heath bedstraw, sweet vernal grass, tormentil, white clover and wood sorrel.

3.2.6.5 Scattered, broad-leaved trees

Birches are scattered across the grassland in the north-west of the site.

3.2.6.6 Neutral grassland, semi-improved

Semi-improved neutral grassland is the predominant habitat across most of the site. It is dominated by cock's-foot and very tussocky as a consequence although locally, it retains more acidic elements where there is an increase in the number of herbs and fine-leaved grasses (such as red fescue). These acidic elements are normally situated on slopes and they become most prominent in the north of the site in the vicinity of the marshy grassland areas.

As well as the dominant cock's-foot, there are frequent to occasional autumn hawk's-bit, bird's-foot trefoil, broad-leaved dock, common mouse-ear, common and creeping bent, creeping buttercup, dog violet, eyebright, field buttercup, hairy lady's-mantle, hoary plantation, perennial rye-grass, red clover, red fescue, ribwort plantain, self-heal, smooth meadow-grass, sorrel, sweet vernal grass, white clover, yarrow, yellow rattle and Yorkshire fog.

In the vicinity of Target Notes 5 and 6, the neutral grassland has many marshy elements in small, waterlogged depressions (see Target Note 5) that become more frequent and extensive towards the north where pure stands of marshy habitat are present. Soft rush and devil'-bit scabious are present in these wetter depressions in association with the species listed above that are widespread in the neutral grassland. Accordingly, there is no differentiation between the 'marshy' and neutral grassland in the absence of other indicators typical of the former habitat.

3.2.6.7 Acid grassland, semi-improved

The small area of acid grassland included within this area is very herb-rich and colourful from a distance. It is located on a steep slope that probably resists improvement through increased rates of leaching (in relation to the more level, surrounding areas of grassland). It has evidently been grazed in the past but such management was not apparent during the field survey.

The most abundant species within the sward are: devil's-bit scabious, sweet vernal grass and yellow rattle in a rich assemblage that includes: autumn hawk's-bit, cock's-foot, common bent, eyebright, field buttercup, germander speedwell, harebell, meadow vetchling, pignut, ragwort, red clover, red fescue, ribwort plantain, white clover and yarrow.

3.2.6.8 Marshy grassland

Small areas of marshy grassland are common in the north of this area. They are distinctive in the appearance of abundant soft rush and star sedge with frequent articulated rush, common

bog-cotton, devil's-bit scabious, lesser spearwort, marsh bedstraw and marsh thistle in a floral assemblage that includes species derived from the neutral grassland. The moss *Calliergonella cuspidata* is also distinctive to this habitat.

Attempts to drain some areas of the marshy grassland have been undertaken in the past. However, the shallow drains are now heavily vegetated and defunct, and although they contain some small areas of open water, no semi-/aquatic species were recorded.

3.2.6.9 Continuous bracken

Stands of bracken are common in the south of the site where they are situated in semi-improved neutral grassland. The impoverished field layer beneath the canopy is therefore composed of species derived from the grassland habitat and otherwise dominated by litter from previous years' bracken growth.

3.2.6.10 Tall ruderal

Tall ruderal vegetation has established on the southern end of the northern half of this area through a combination of abandonment of grazing as well as the dumping of soil from elsewhere. Cock's-foot remains abundant, as elsewhere in the neutral grasslands here, from which this tall ruderal habitat has been derived, but field thistle is now abundant.

3.2.6.11 Basin mire

Basin mire occupies the larger depressions in the north of the area. It is partially groundwater-fed but small ombrogenous areas are apparent in the appearance of abundant *Sphagnum papillosum* and to a lesser extent, frequent *S. capillifolium*. Bog myrtle is frequent to locally abundant and the following species are frequent to occasional: bog asphodel, cross-leaved heath, marsh violet, marsh cinquefoil, mat grass, purple moor-grass, round-leaved sundew, soft rush, star sedge; and blaeberry and heather occur rarely on raised hummocks of *Sphagnum*. The moss flora includes, in addition to the species already mentioned: *Aulacomnium palustre, Polytrichum juniperinum, Sphagnum cuspidatum, S. denticulatum, S. mucronatum* and *S. pasture*.

Cattle graze across the surface of the mire but not intensively so. However, the marginal areas are heavily poached locally and traces of poaching are evident across the entire area of the mire.

3.2.7 Site 12h

3.2.7.1 Notable species

None

3.2.7.2 General description

This site to the southwest of Boat of Garten comprises pinewood with grassland and heath on the open ground intervening between the woodland and the existing houses and gardens. A

path follows the edge of the woodland through the mosaic of grassland, heath and scattered scrub described below.

Table 15: Habitats recorded within the Site 12h boundary: their JNCC code; title; and relative and absolute areas

Habitat Code	Habitat Title	Area (ha)	Area (%)
A1.2.1	Woodland, coniferous, semi-natural	2.2	75.9
A3.2	Scattered scrub	n.a.	n.a.
B2.2	Neutral grassland, semi-improved	0.5	17.2
D1.1	Acid, dry dwarf shrub heath	0.2	6.9
	Totals	**2.9**	**100.0**

3.2.7.3 Woodland, coniferous, semi-natural

The woodland canopy here is dominated by pine with frequent rowan saplings forming a discontinuous shrub layer. The varied age and size of the trees suggest that it is semi-natural. The field layer is very grassy with abundant wavy hair-grass and frequent to occasional: cowberry, greater woodrush and Yorkshire fog with an underlying moss layer dominated by *Hylocomium splendens* and *Rhytidiadelphus triquetrus*. In the eastern margin of the pinewood there are frequent elements derived from the semi-improved neutral grassland described below.

3.2.7.4 Scattered scrub

Birch saplings, broom, heather and Scot's pine saplings are scattered throughout the other open habitats described here with a concentration to the south of the site.

3.2.7.5 Neutral grassland, semi-improved

Deer presumably maintain this grassland habitat in a semi-improved condition and prevent encroachment by the dry heath with which it forms a mosaic. The current dominance of false oat-grass suggests that the levels of grazing have reduced recently.

As well as false oat-grass there is frequent to occasional cock's-foot, common bent, creeping buttercup, eyebright, mat grass, sweet vernal-grass, vetch white clover and Yorkshire fog. With exception to locally dominant, small stands of these plants, no one species dominates the over all composition. Stands of stinging nettles and field thistle area also associated with the grassland.

3.2.7.6 Dry dwarf shrub heath

The heath habitat is dominated by blaeberry, cowberry and heather; and *Hylocomium splendens* in the moss layer. Mat grass and wavy hair-grass are frequent in association with species derived from the neutral grassland described above.

3.2.8 Site 12i

3.2.8.1 Notable species

Juniper.

3.2.8.2 General description

Two areas of pine woodland separated by a road. The canopy is dominated by Scot's pine beneath which there are numerous regenerating birch and rowan frequently forming small thickets. The field layer is relatively diverse but not rich in species although the presence o intermediate wintergreen is of significance.

Table 16: Habitats recorded within the Site 12i boundary: their JNCC code; title; and relative and absolute areas

Habitat Code	Habitat Title	Area (ha)	Area (%)
A1.2.1	Woodland, coniferous, semi-natural	3.6	100.0
	Totals	**3.6**	**100.0**

3.2.8.3 Woodland, coniferous, plantation

To the east of the road dissecting the site the woodland appears to have comprised a relatively open canopy of Scot's pine under which grazing took place (presumably by deer). The diminution of this factor is apparent in the regeneration of numerous birches and rowans now 1-4(-8)m tall beneath a pine canopy of 12-15m height. Broom and juniper are also occasional within this shrub layer.

The field layer beneath the canopy is limited in diversity and cover beneath the regenerating trees. Elsewhere it has elements of semi-improved neutral grassland in transition with a heath-like pinewood flora. This results in a moderate diversity of common species including: blueberry, bramble, chickweed wintergreen, cross-leaved heath, devil's-bit scabious, eyebright, hard fern, heath bedstraw, heath-spotted orchid, heather, marsh bedstraw, ragwort, red fescue, soft rush, tormentil, way hair-grass, wood rush, yarrow and Yorkshire fog.

The large extent of pinewood habitat is situated on the western side of the road. It is very heterogeneous with dense stands of relatively immature pines 4-8m high and frequent birch and rowan where clearings have existed in the past beneath the uppermost canopy layer that is composed of Scot's pine (exclusively) 12-15m high.

The field layer in the westernmost block of woodland is dominated by sub-shrubs with blueberry dominant and associated with frequent to occasional: cowberry and heather in the openings beneath the canopy and shrub layer. Otherwise, the same arrange of associates as listed for the eastern block are present, albeit at a lower cover.

3.2.9 Site 12j

3.2.9.1 Notable species

Ptilium crista-castrensis (Nationally Scarce – see Target Note 1).

3.2.9.2 General description

This site to the south-west of Boat of Garten is wholly pinewood.

Table 17: Habitats recorded within the Site 12j boundary: their JNCC code; title; and relative and absolute areas

Habitat Code	Habitat Title	Area (ha)	Area (%)
A1.2.1	Woodland, coniferous, plantation	7.7	100.0
	Totals	**7.7**	**100.0**

3.2.9.3 Woodland, coniferous, plantation

The western stand of coniferous plantation is very homogenous (with an even age and size structure) and a simple layering of mosses, sub-shrubs and the tree canopy. Blaeberry, cowberry and heather are co-dominant in a species-poor assemble in which greater woodrush, sweet vernal-grass and wavy hair-grass are rare. In the moss layer, *Hylocomium splendens* is dominant with frequent to occasional *Pleurozium schreberi* and *Rhytidiadelphus triquetrus*.

3.2.10 Site 22

3.2.10.1 Notable species

None

3.2.10.2 General description

This site is quite complex with a variable canopy composition and cover. In the north-east of the site the canopy is very open and mapped as scattered trees situated in a mosaic of wet and dry heath. In the south-west, the canopy cover is more continuous and it includes semi-natural as well as planted woodland. A small oligotrophic pond is present in the southeast. No Target Notes were recorded because in the absence of point features of ecological significance, the site is adequately described as a series of habitat units.

Figure 6: Phase 1 Habitat Map of the Carrbridge sites (Sites 22 and 25).

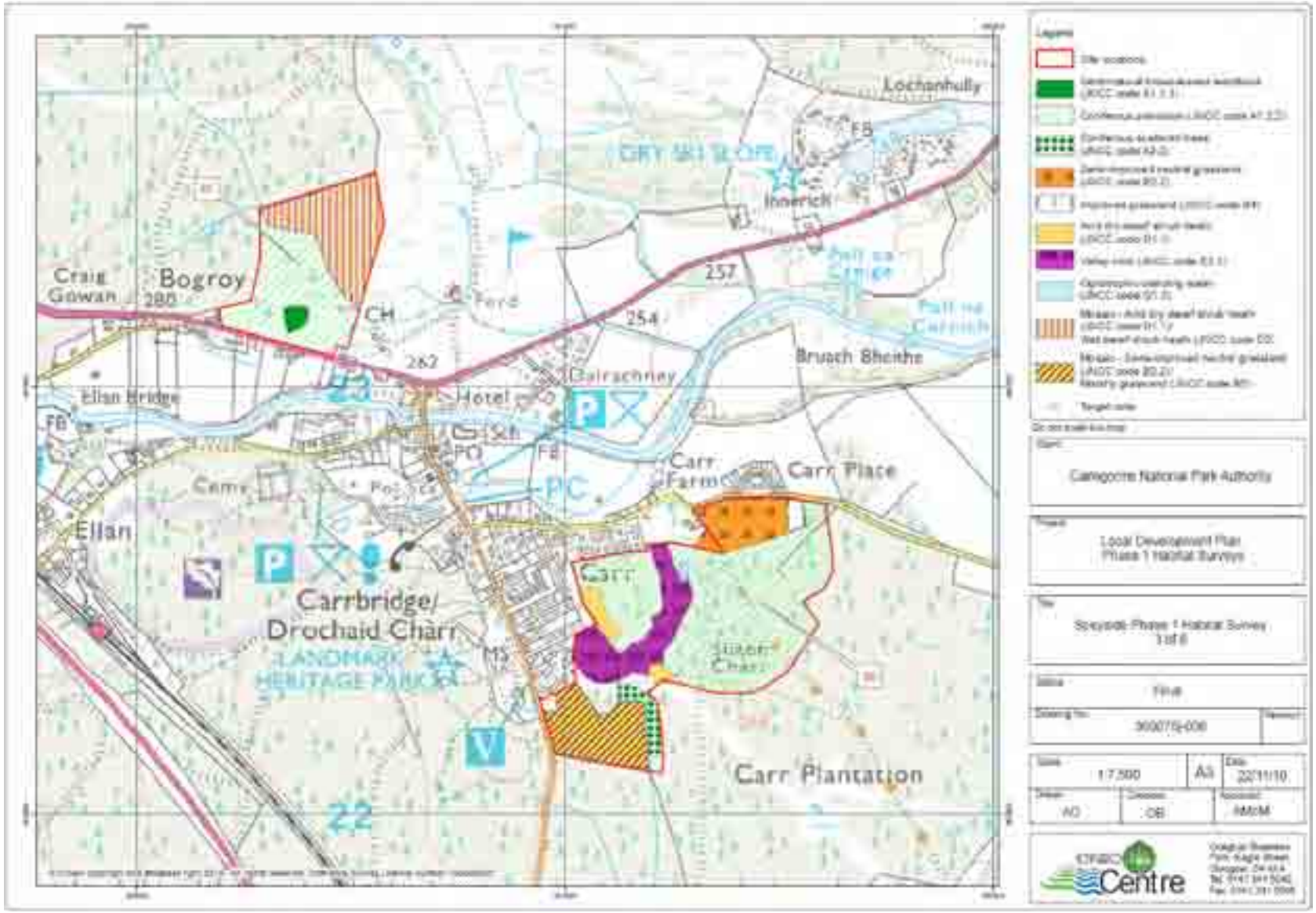


Figure 7: Phase 1 Habitat Map of the Cromdale sites (Sites 29a and 29b).

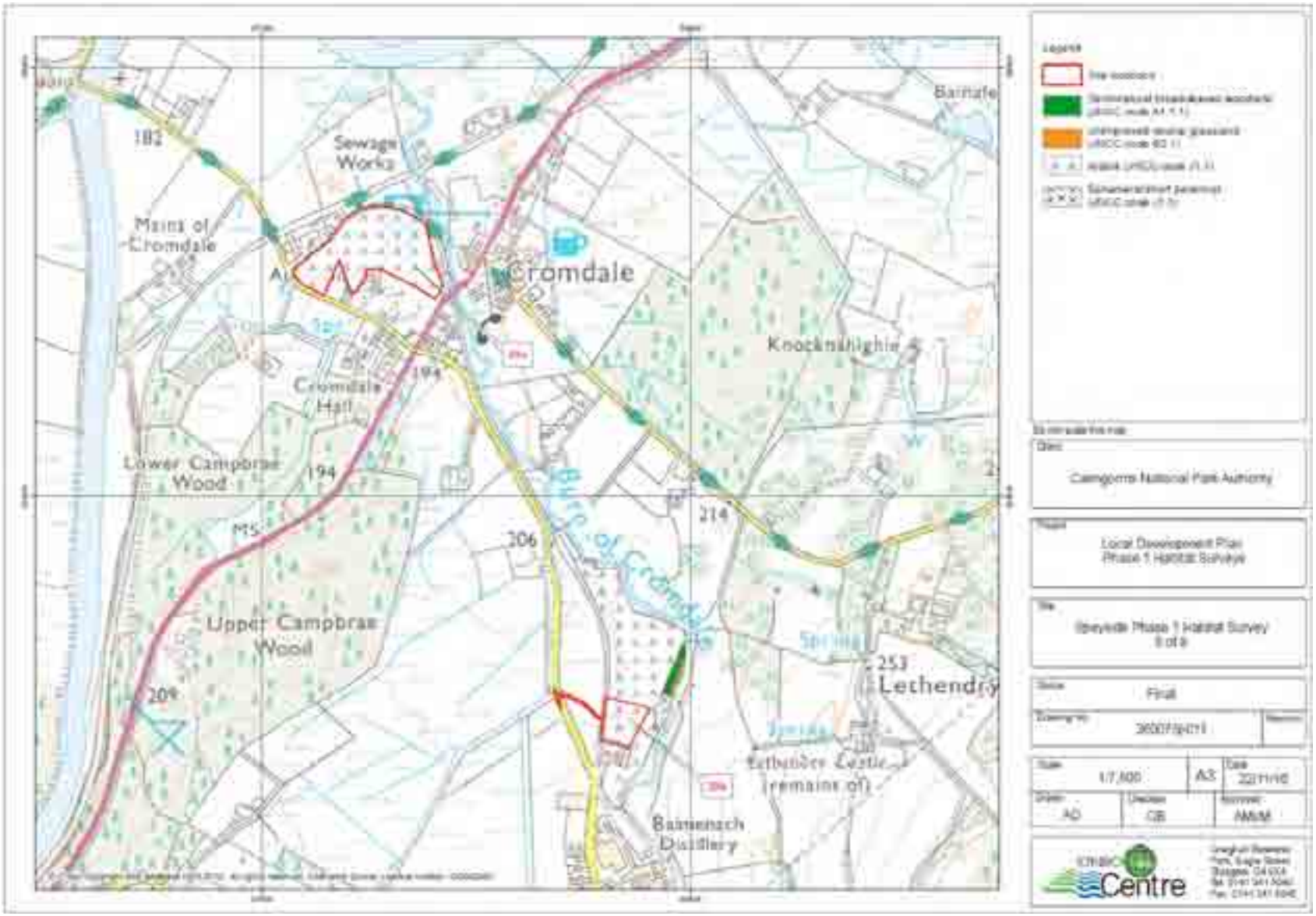


Figure 8: Phase 1 Habitat Map of the Muckrach site (Site 34c).

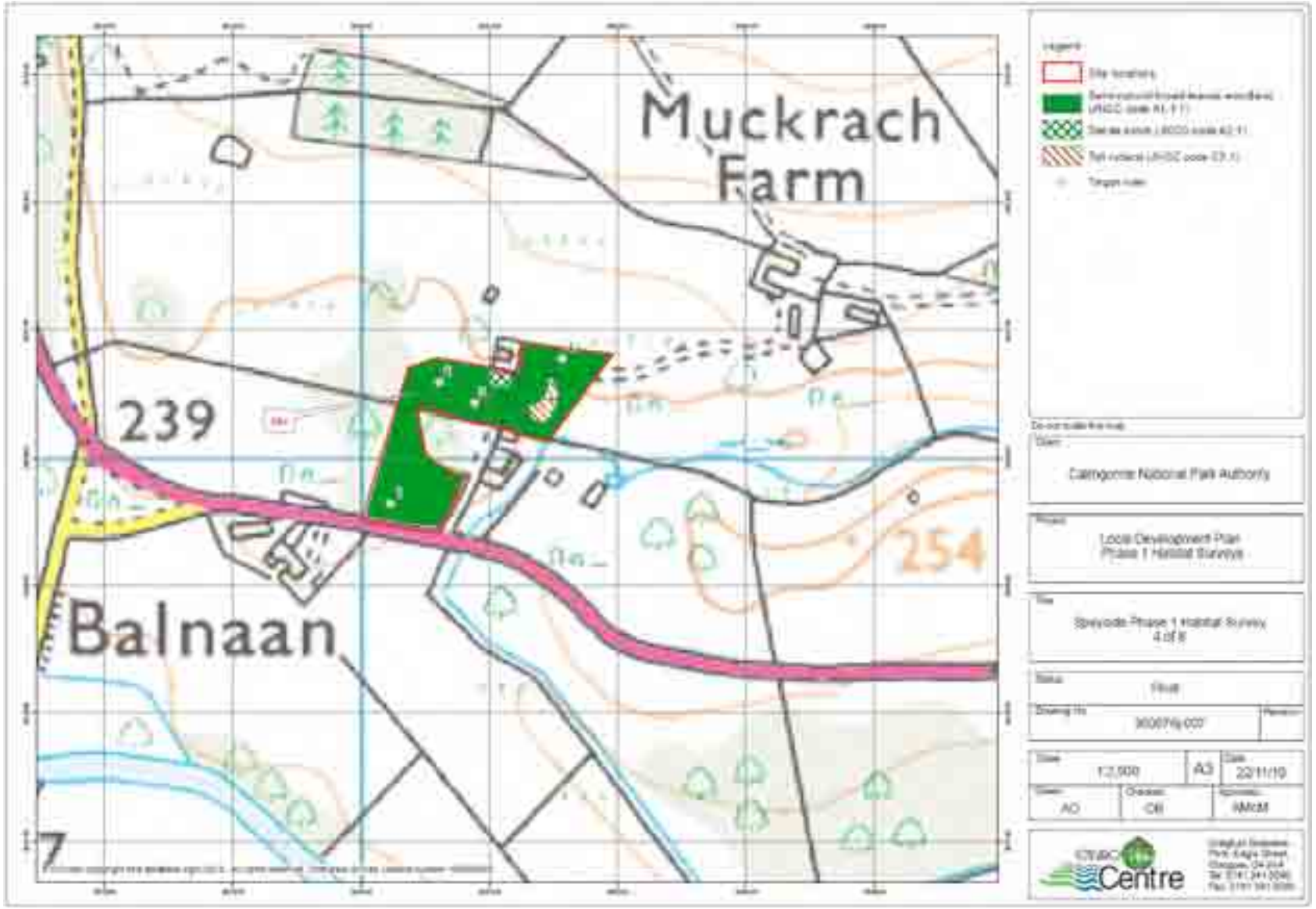


Table 18: Habitats recorded within the Site 22 boundary: their JNCC code; title; and relative and absolute areas

Habitat Code	Habitat Title	Area (ha)	Area (%)
A1.1.1	Woodland, broad-leaved, semi-natural	0.3	3.0
A1.2.1	Woodland, coniferous, semi-natural	5.3	53.0
D1.1	Acid, dry dwarf shrub heath	4.3	43.0
D2	Wet dwarf shrub heath		
G1.3	Oligotrophic standing water	0.1	1.0
	Totals	**10.0**	**100.0**

3.2.10.3 Woodland

The woodland habitat forms a complex mosaic of canopy and field layer types. The canopy ranges from domination by birch to a situation where pine is dominant, via a relatively continuous range of intermediate compositions. The field layer is equally variable and ranges from wet to dry heath including small areas of the latter where grasses become more prominent beneath the birch. In the south of the site where planted pines predominate, the vegetation is completely suppressed by the dense shade and litter cast by the canopy.

The pine tree canopy is composed of self-sown and planted specimens in a variable composition on the drier parts of the site. Beneath close stands of the self-sown areas of pinewood the species assemblage of the field layer is generally rather low and it includes sparse to abundant: blueberry, crowberry and heather as well as a relatively continuous cover of *Hylocomium splendens* with frequent *Rhytidiadelphus triquetrus*. In more open situations, the dry heath community described below is present.

Where the soil has been 'improved' through the presence of a high proportion of birch in the woodland canopy, the field layer is much more grassy with common and creeping bents, creeping soft bent, dog violet, lady's bedstraw, tufted hair grass, yarrow and Yorkshire fog becoming prominent to abundant amongst the more 'heathy' floral elements.

3.2.10.4 Dry dwarf shrub heath

The dry heath field layer beneath the trees has a greater proportion of blueberry and cowberry than in the open where heather is the almost exclusively dominant sub-shrub. As well as blueberry, there is a species poor assemblage of species generally derived from the more open areas of habitat that includes most frequently to occasionally: bearberry; crowberry, red, sheep and viviparous fescues; wavy hair-grass and the mosses *Hylocomium splendens Pleurozium schreberi, Rhytidiadelphus triquetrus* and occasional *S. papillosum*.

3.2.10.5 Wet dwarf shrub heath

Wet, dwarf shrub heath is situated on the lower parts of the site over thin peat. It is very diverse and dominated by a relatively even mix of abundant bog asphodel, bog myrtle, common bog-cotton, cross-leaved heath, deer grass and the bog mosses *Sphagnum capillifolium* and *S. papillosum*.

As well as the dominant mix of species listed above, there are frequent to occasional: black sedge, carnation grass, common bent, cowberry, crowberry, hare's-tail bog cotton, heath rush, heath-spotted orchid, lousewort, purple moor-grass, round-leaved sundew, Scot's pine saplings, purple moor-grass, soft rush, Tormentil, and white sedge.

The mosses *Aulacomnium palustre, Hylocomium splendens, Hypnum jutlandicum, Odontoschisma sphagni, Polytrichum juniperinum, Sphagnum capillifolium, S. compactum, S. cuspidatum, S. fimbriatum, S. fuscum, S. magellanicum, S. mucronatum, S. papillosum* and *S. subnitens* reflect the atmospheric/ground water balance of the water supply. Lichens of the genus *Cladonia* species are occasional in the drier parts of the wet heath.

3.2.10.6 Oligotrophic standing water

This small, oligotrophic pond retains open water that is succeeding to a floating raft of *Sphagnum*-dominated vegetation with *Calliergon giganteum, Sphagnum fimbriatum, S. girgensohnii, S. mucronatum and S. palustre*; and bog myrtle, cross-leaved heath, crowberry and tormentil. *S. capillifolium* and *S. papillosum* have established where the raft is more consolidated and in the process of shifting to an ombrogenous water supply.

Marginally, bottle sedge and black sedge are emergent through a raft of *Sphagnum* in association with *Calliergon cordifolium*, marsh violet, *Polytrichum commune* and round-leaved sundew. Bog pondweed is present in the small areas of open water remaining.

At the time of the survey there was very little invertebrate activity in evidence and this is probably suppressed by shade from the surrounding trees. However, it is probable that dragonflies and other 'pond' species are present in low to moderate numbers.

3.2.11 Site 23

3.2.11.1 Notable spies

Juniper/

3.2.11.2 General description

The two stands of pine plantation that comprise this site are very homogenous and the trees are closely planted. Well-used paths pass through both stands. A small, linear clearing in the south-east stand supports an area of species-poor dry heath.

Table 19: Habitats recorded within the Site 23 boundary: their JNCC code; title; and relative and absolute areas

Habitat Code	Habitat Title	Area (ha)	Area (%)
A1.2.1	Woodland, coniferous, plantation	9.1	97.8
D1.1	Acid, dry dwarf shrub heath	0.2	2.2
	Totals	**9.3**	**100.0**

3.2.11.3 Woodland, coniferous, plantation

The dense canopy of trees is dominated exclusively by closely-planted Scot's pine in the western area. Beneath the dense shade the field layer is relatively species-poor and sparse in paces. Where the shade is greatest, wavy hair-grass is abundant and *Hylcomium splendens* dominant. Elsewhere, the sub-shrubs blaeberry, cowberry and heather are locally dominant to abundant with a number of rare, associated herbs: bugle, common cow-wheat, tormentil and wood anemone; and rowan saplings. A small number of creeping lady's-tresses were recorded in the vicinity of Target Notes 2 and 3.

The eastern stand of trees is subject to higher levels of grazing probably facilitated by the reduced traffic along this section of path (in the western stand, the path leads to the primary school). Consequently, grasses are much more abundant and the sub-shrubs are relatively scarce. Common bent and Yorkshire fog are abundant with frequent wavy hair-grass. Occasional birches are also present amongst the pines and these result in the presence of a slightly more diverse and productive field layer including: bramble, bugle, germander speedwell, hard fern, male fern and wood sorrel.

3.2.11.4 Acid, dry dwarf shrub heath

This small clearing is maintained to prevent interference of the pine canopy with the power lines that pass through this narrow area. The sub-shrub layer is similar to that of the woodland with abundant blaeberry, cowberry and heather. Birch saplings, field woodrush, tufted hair-grass and Yorkshire fog are the only additional species.

3.2.12 Site 25

3.2.12.1 Notable species

Potential summer bat roosts.

3.2.12.2 General description

This site to the east of Carrbridge incorporates a variety of habitats. – coniferous woodland, semi-improved and improved grassland, heath, wetland and broad-leaved plantation.

Table 20: Habitats recorded within the Site 25 boundary: their JNCC code; title; and relative and absolute areas

Habitat Code	Habitat Title	Area (ha)	Area (%)
A1.2.1	Woodland, coniferous, plantation	14.3	61.6
A1.1.2	Woodland, broad-leaved, plantation	0.1	0.4
A3.2	Scattered, coniferous trees	n.a.	n.a.
B2.2	Neutral grassland, semi-improved	1.9	8.2
B2.2/B5	Neutral, semi-improved / marshy grassland mosaic	3.1	13.4
B4	Improved grassland	0.3	1.3
D1.1	Acid, dry dwarf shrub heath	0.5	2.2
E3.1	Valley mire	3.0	12.9
	Totals	**23.2**	**100.0**

3.2.12.3 Woodland, coniferous, plantation

There is only a limited amount of variation in the age and diameter of the trunks in this area of coniferous plantation but the closed canopy height is relatively even. There is very little structure beneath the canopy with exception to a small number of rowan saplings (see Target Note 4)

The field layer is relatively homogenous and species-poor – a reflection of the density of the canopy and the shade and litter that it casts as well as the evident secondary origins of this area of woodland. Blaeberry, cowberry and heather are abundant as well as the mosses *Hylocomium splendens* and *Rhytidiadelphus triquetrus*. Creeping lady's-tresses, crowberry and chickweed wintergreen are all rare.

Scattered deadwood and brash is uncommon but where larger boughs or stumps are present and not consumed by the field layer, bryophyte species such as *Dicranum fuscescens, D. scoparium, Hypnum andoi* and *Nowellia curvifolia* are occasional.

Additional ecological features in this plantation are rare but include the earth and ants' nest referred to in target Notes 5 and 6.

3.2.12.4 Woodland, broad-leaved, plantation

This small area of plantation includes aspen, birch, goat willow and grey willow planted over the neutral, semi-improved / marshy grassland mosaic described below. Soft rush and tufted hair-grass have become especially prominent in the field layer as a consequence of the planting of the trees that are currently up to 4m tall.

3.2.12.5 Scattered, coniferous trees

A small number of scattered, self-sown pines have established on the semi-improved neutral grassland in the south-east of the site.

3.2.12.6 Neutral grassland, semi-improved

This habitat has been used for grazing which had ceased across most of the site at the time of survey except for in the vicinity of the buildings in the west where horses are kept (see Target Note 1). The vegetation composition is dominated by abundant common bent, red fescue and also ribwort plantain – the latter reflecting trampling pressure in particular through its colonisation of bare earth exposed by poaching. Additional frequent to occasional species include: autumn hawk's-bit, broad-leaved dock, cock's-foot, common mouse-ear, field buttercup, germander speedwell, red clover, sweet vernal grass, white clover, yarrow and yellow rattle.

3.2.12.7 Neutral, semi-improved / marshy grassland mosaic

This mosaic is defined on the appearance of both habitat types in a fine scale mosaic as well as the presence of transitional areas in which species derived from both habitats are present.

The semi-improved neutral grassland has evidently been grazed in the past but this management and drainage has lapsed so that tussocky grasses have now established. Timothy remains abundant and is indicative of the past improvement of the habitat. Cock's-foot and tufted hair grass are also abundant, the latter indicating the deterioration of the 'improved' condition. Other frequent to occasional species include: bird's-foot trefoil, common mouse-ear, field buttercup, field thistle, meadow vetchling, red fescue, ribwort plantain, sorrel, sweet vernal grass and white clover.

3.2.12.8 Improved grassland

The small area of improved grassland has only recently been sown. Bare earth was therefore still much in evidence at the time of visit with a number of weed species (broad-leaved dock, chickweed and knotweed) present in addition to the sown perennial rye-grass and white clover (see Target Note 2).

3.2.12.9 Acid, dry dwarf shrub heath

The dry, dwarf shrub heath habitat is present in the firebreaks between the blocks of coniferous plantation (see Target Note 8). It contains the same species assemblage as located in the field layer of the coniferous plantation but heather is dominant in the open conditions and the other species listed in Section 3.2.13 are frequent to occasional. A small number of additional species were recorded, all of which are occasional to rare: oval sedge, petty whin, pill sedge and tormentil.

Scattered pines are colonising but they are not as dense or as tall as those that have established on the valley mire described below.

3.2.12.10 Valley mire

Valley mire is extensive in the western part of the site. In its eastern extent, it is poorly consolidated with frequent open water pools and low hummocks (see Target Note 7). Heather and hare's-tail bog-cotton are co-dominant on the hummocks with *Sphagnum capillifolium* and *S. papillosum*. The depressions and pools are dominated by *S. cuspidatum* and bottle sedge. Additional species include frequent to occasional common bog-cotton, cross-leaved heath, crowberry and the mosses: *Aulacomnium palustre, Cladonia* spp., *Hypnum jutlandicum*, *Pleurozium schreberi*, *Polytrichum commune*, *Sphagnum cuspidatum* and *S. mucronatum*.

The western extent of the valley mire (Target Note 10) is quaking in places and very poorly consolidated suggesting succession over open water. The same species as listed above are present but because of the greater influence of groundwater (*cf*. rainwater), the following additional species were recorded: black sedge, bladder sedge, bottle sedge, common bog-cotton, marsh bedstraw, marsh cinquefoil, marsh willow-herb, ragged robin, star sedge, velvet bent and white sedge as well as the mosses *Calliergon stramineum, Sphagnum fimbriatum, S. girgensohnii, S. mucronatum* and *S. palustre*. Bottle sedge is dominant and the other species listed are frequent to occasional. In the extreme south-west, soft rush and Yorkshire fog become frequently present in the transition to the grassland habitat.

Scattered pines up to 5m tall have established across all parts of the mire and form locally impenetrable thickets over tens of square metres.

3.2.13 Site 29a

3.2.13.1 Notable species

None.

3.2.13.2 General Description

This site was under arable land use at the time of survey. No additional or notable ecological features were located.

Table 21: Habitats recorded within the Site 29a boundary: their JNCC code; title; and relative and absolute areas

Habitat Code	Habitat Title	Area (ha)	Area (%)
J1.1	Arable	4.1	100.0
	Totals	**4.1**	**100.0**

3.2.14 Site 29b

3.2.14.1 Notable species

None.

3.2.14.2 General Description

A field of stubble with a wooded bank and field of neutral grassland leading to a watercourse immediately beyond the site boundary.

Table 22: Habitats recorded within the Site 29b boundary: their JNCC code; title; and relative and absolute areas

Habitat Code	Habitat Title	Area (ha)	Area (%)
A1.1.1	Woodland, broad-leaved, semi-natural	0.2	3.2
B2.1	Neutral grassland, unimproved	0.1	1.6
J1.1	Arable	5.7	91.9
J1.3	Ephemeral/short perennial	0.2	3.2
	Totals	**6.2**	**100.0**

3.2.14.3 Woodland, broad-leaved, semi-natural

The woodland includes a number of broad-leaved species dominated by birch with occasional beech, bird cherry and rowan. The narrow strip of the canopy admits a lot of light and the field layer is similar to that described below for the neutral grassland but with a higher proportion of sweet vernal grass and creeping soft bent as an additional abundant species.

3.2.14.4 Neutral grassland unimproved

The neutral grassland has tall ruderal elements dominated by field thistle, hogweed and stinging nettles. More strictly grassland elements are dominated by abundant cock's-foot and Yorkshire fog with frequent to occasional: creeping buttercup, field buttercup, germander speedwell, lady's bedstraw, meadow vetchling, soft rush, sorrel, sweet vernal grass,

A limited amount of grazing by roe deer is in evidence but livestock have evidently not been present in the recent past (according to the absence of dung and poaching and the species composition of the grassland).

3.2.14.5 Arable

The arable field has been left as stubble and been colonised by a limited number of 'weed' species: cock's-foot, broad-leaved dock, field buttercup and field thistle.

3.2.14.6 Ephemeral/short perennial

The ephemeral short perennial vegetation is present over a concrete and hard standing substrate whose past use was not determined. The weed flora includes: *Barbula* spp., *Brachythecium rutabulum*, *Ceratodon purpureus*, bird's-foot trefoil, *Polytrichum juniperinum*, rose-bay willow-herb, sibbaldia, silverweed, soft rush and stinging nettles in addition to a low cover of species derived from the adjoining neutral grassland.

3.2.15 Site 34a

3.2.15.1 Notable species

None.

3.2.15.2 General description

A stand of Norway spruce plantation.

Table 23: Habitats recorded within the Site 34a boundary: their JNCC code; title; and relative and absolute areas

Habitat Code	Habitat Title	Area (ha)	Area (%)
A1.1.1	Woodland, coniferous, plantation	4.7	100.0
	Totals	**4.7**	**100.0**

The plantation of Norway spruce that occupies this site has been recently thinned. Prior to this, the canopy was evidently very dense and continuous because the field layer is generally limited to occasional carpets of feather mosses. Much brash and some larger boughs remain from the thinning operations. The moss cover is a relatively diverse assemblage of common, widespread species including: abundant to frequent *Hylocomium splendens, Hypnum cupressiforme, Pleurozium schreberi, Scleropodium purum* and *Plagiomnium undulatum*. Higher plants are rare and only cuckoo flower and wavy hair grass were recovered from beneath the canopy.

More open areas along the track closely paralleling the western site boundary support a relatively diverse flora of grassland and ruderal species including frequent to occasional: broad-leaved dock, common and creeping bents, common mouse-ear, dandelion, germander speedwell, hoary plantain, nettles, ragwort, rose-bay willow-herb, self-heal and tufted hair-grass as well as more distinctive woodland elements including: bugle, dog's mercury and wood sorrel.

3.2.16 Site 34c

3.2.16.1 Notable species

None.

3.2.16.2 General description

The majority of this site is birch woodland with a semi-improved neutral grassland field layer that reflects the open nature of the birch canopy and grazing by livestock. Smaller areas of scrub and tall ruderal habitat are present. Floral elements of the latter are also common in parts of the grassland where grazing management has ceased.

Table 24: Habitats recorded within the Site 34c boundary: their JNCC code; title; and relative and absolute areas

Habitat Code	Habitat Title	Area (ha)	Area (%)
A1.1.2	Woodland, broad-leaved, semi-natural	1.1	94.9
A2.1	Continuous scrub	<0.1	1.6
C3.1	Tall ruderal	<0.1	3.5
	Totals	**1.1**	**100.0**

3.2.16.3 Woodland, broad-leaved, semi-natural

Although this habitat is mapped across the greater part of the site it is, in a sense, only half of the story because the underlying field layer is referable to semi-improved neutral grassland. This is because grazing management of the underlying field layer has been undertaken over a sufficiently long period of time to promote development of a semi-improved neutral grassland.

The woodland canopy is composed exclusively of birch which is sufficiently open to create appropriate conditions for development of the grassland. Woodland elements are almost completely absent apart from within the small, enclosed area denoted by Target Note 1. Epiphytes area also lacking apart from occasional to rare crustose and fruticose lichen species because of the open, exposed conditions beneath the canopy in the absence of a shrub layer and through the rubbing of livestock against the trees.

In the south-west of the site, in the vicinity of Target Note 1, the management of the pasture by grazing has ceased and this has resulted in the presence a tall growth of ruderal herbs, especially field thistle and nettles, both of which are abundant. The remaining species reflect the improvement and disturbance associated with past grazing of the area: smooth meadow-grass, cock's-foot, field buttercup, Yorkshire fog. Wetter depressions in the grassland include elements of marshy grassland apparent in the appearance of frequent soft rush and creeping bent as well as occasional tufted hair grass as distinctive species amongst those from the foregoing assemblage.

The small stand of relatively open and exposed birch woodland in the east of the site has a similar assemblage of species except for the tall ruderal elements that are suppressed here by grazing. Common bent is dominant with somewhat more acidic elements including devil's-bit scabious, harebell, sweet vernal grass and tufted hair-grass. Broom forms a partial shrub layer and the presence of nettles in small patches is indicative of sheltering by livestock.

3.2.16.4 Continuous scrub

The small area of continuous scrub cover is associated with Muckrach Cottage. Bramble and broom are abundant with frequent birch saplings suggesting that it is in a process of succession to woodland. In the field layer there are a variety of herbs including: common bent, field buttercup, foxglove, hogweed, knapweed, purple deadnettle, raspberry, smooth meadow-grass, sweet vernal grass, yarrow and Yorkshire fog.

3.2.17 Site 34d

3.2.17.1 Notable species.

None.

3.2.17.2 General description

A moderately-sloping, improved grassland field used for pasture.

Table 25: Habitats recorded within the Site 34d boundary: their JNCC code; title; and relative and absolute areas

Habitat Code	Habitat Title	Area (ha)	Area (%)
B4	Improved grassland	1.4	100.0
	Totals	**1.4**	**100.0**

Perennial rye-grass dominates the sward here with abundant white clover. Their presence reflects the reseeding undertaken as part of the improvement of this area of pasture. Chickweed, daisy, field thistle, self-heal, ragwort, red and sheep's fescue, smooth meadow-grass, Timothy and Yorkshire fog remain occasional and are likely to persist given the inclination of the field and its consequent propensity for a high rate of leaching and reversion from improvement.

3.2.18 Site 34i

3.2.18.1 Notable species

None.

3.2.18.2 General description

This site is a single field with improved grassland.

Table 26: Habitats recorded within the Site 34i boundary: their JNCC code; title; and relative and absolute areas

Habitat Code	Habitat Title	Area (ha)	Area (%)
A1.1.1	Improved grassland	1.1	100.0
	Totals	**1.1**	**100.0**

3.2.18.3 Improved grassland

Perennial rye grass is dominant in this improved sward with abundant white clover and occasional field buttercup. Additional species are very rare and they include: cock's-foot, hogweed, mouse-ear chickweed and shepherds' purse. At its western end, the grassland habitat is less improved and it includes an increased proportion of field buttercup, smooth

meadow-grass and Yorkshire fog as well as small stands of abundant field thistle and nettles beneath the under hanging trees that are indicative of disturbance by sheltering livestock.

APPENDIX A

Target Notes and Photographs

Target Note No. & Grid Ref.[7]	Notes	Photograph
Site 002		
1 95117 20434	Small area measuring a few tens of square metres with a mix of dry heath, grassland and wet heath as well as scattered broom and juniper.	
2 95110 20406	This drain is deeply incised into the peat and obscured by the vegetation canopy. Accordingly, it contains no distinctive species and is effectively a 'pipe'.	

[7] All grid references refer to grid square 'H'.

3 95129 20387	Drain paralleling the back of the houses and bordered by a lush growth of grasses including perennial rye-grass derived from the gardens. Broom is also occasional along its length.	
Site 3a		
1 01481 20205	On either side of the clearing the pines are very closely planted and the field layer is absent (replaced instead by a deep bed of litter and brash.	

2 01511 20276	This drain is choked with vegetation and the areas of open water were stagnant at the time of survey. The moss layer is especially well developed with abundant *S. mucronatum* and frequent *Polytrichum commune*. Wavy hair-grass is also abundant and marsh violet is occasional in this species-poor assemblage.	
3 01309 20521	Drain with water flowing to the north despite heavy encroachment by flöte grass, soft rush, tufted hair-grass and water horsetail.	n.a.
4 01309 20521	Tall ruderal vegetation with scattered broom on a small spoil heap to the rear of the housing. The tall ruderal vegetation includes: cock's-foot, creeping buttercup, field thistle, soft rush, tufted hair-grass, Yorkshire fog.	
5 01368 20409	Open clearing with a small stand of species-poor dry heath dominated by heather with abundant *Hypnum cupressiforme*, mat grass and frequent cowberry. The wetter surroundings beneath the canopy support abundant purple moor-grass.	
Site 12a		

1 99486 24753	Refer to Section 3.2.3.2.	
Site 12b		
1 00966 20183	Dense stand of tall ruderal vegetation dominated by lupins and stinging nettles.	
2 n.a.	Clearing with much bare earth following the removal of a building and because of the dense shade cast by the canopy of conifers.	
3 00996 20030	Thicket of immature birches colonizing over an area of neutral grassland with occasional saplings of Norway spruce and Scot's pine.	

4 01043 19979	Beech hedge borders the path through this part of the site. A relatively diverse assemblage of moss and liverwort species adorns the branches including: *Amblystegium serpens, Hypnum andoi, Lophocolea bidentata, Orthotrichum affine* and *Radula complanata.*	
5 n.a.	Neutral grassland with abundant tufted hair-grass.	
6 n.a.	Dense thicket of Norway spruce 12m high.	
7 n.a.	As Target Note 5 but with abundant bird cherry 2-4m high and a lone birch. The cherries are heavily infected by smut.	

8 n.a.	Another length of beech hedge but much better grown in the absence of clipping and the epiphytic flora is therefore a very much impoverished version of that recorded at target Note 4 in terms of its cover although the same species remain present.	
Site 12c		
1 n.a.	Refer to Section 3.2.5.4.	
2 n.a.	Refer to Section 3.2.5.7	
3 n.a.	Refer to Section 3.2.5.3. A fox earth is also associated with this area of habitat.	

4 n.a.	Refer to Section 3.2.5.8.	
5 n.a.	Refer to Section 3.2.5.7.	
6 99604 20537	A birch, Scot's pine and a rowan provide shelter for grazing animals and this has resulted in the growth of a dense stand of nettles.	

6 99601 20490	A lone, partially moribund rowan.	
Sites 12d, 12e & 12f		
1 02728 28040	Turf-capped dyke with species derived from the adjoining grassland and frequent broom	
2 n.a.	Small stand of broad-leaved trees within the coniferous plantation. Birch is dominant with occasional rowan. The understory is dominated by bracken and nettles with a species poor field layer of common grassland species and wood sorrel as the only distinctive woodland floral element.	

3 02627 28075.	Two mature and rather exposed aspens with a dense cover of fruticose lichens. Suckers are not very frequent in their vicinity and are presumable suppressed by the adjacent bracken as well as grazing although this was not an active factor at the time of survey.	
4 00996 20030	Tall ruderal vegetation. Refer to Section 3.2.6.10.	
5 n.a.	Tussocks of soft rush in wet depressions within the semi-improved neutral grassland habitat.	
6 02999 28274	Close-cropped area of enclosed grassland and shelter for a ponies.	

7 03095 28480	Birch and pines along the line of a relict stone dyke supplemented with a wire fence in need of repair. Stands of tall ruderal habitat dominated by nettles indicate the presence of sheltering livestock.	
8 03102 28488	The grassland in this area is mapped as acidic although it is somewhat transitional because of the persistence of a high cover of species derived from the neutral grassland. Devil's-bit scabious, mat grass and sweet vernal grass are abundant and relatively distinctive as well as occasional lady's bedstraw. Field gentian is also associated with this area of habitat.	
9 03131 28500	Potential earth or warren entrance that has exploited an existing, straight-sided cut made with a spade.	
10 99713 24647	A small burn flows through this part of the site before entering the margins of the broad-leaved woodland where it becomes canalised into a drain. The bed is composed of cobbles and gravel which is evidently relatively mobile during spates according to the paucity of aquatic plant species. Some sand is present within pools. Grazing takes place right up to the edge of the burn and this limits the extent of any distinctive riparian zone which is otherwise dominated by species derived from the adjoining grassland.	

11 03409 28477	Stands of field thistle and ragwort within the semi-improved neutral grassland.	
12 03266 28429	Basin mire. Refer to Section 3.2.6.11.	
Site 12i		
1 99713 24647	Small stand of c. 20 spikes of intermediate wintergreen spread over an area approximately 8m^2.at the foot of a bank	
2 99765 24524	Unusual area of mire developed over an impervious gravel substrate probably of anthropogenic origin. Approximate 15cm of organic deposit has accumulated beneath a waterlogged vegetation layer dominated by Sphagnum subsecundum with frequent to occasional: bladder sedge, common bog cotton, *Drpeanocladus fluitans*, marsh cinquefoil, soft rush and *S. mucronatum*. Heavily poached although the moss layer remains relatively continuous with occasional stands of higher plants. The moss species are indicative of periodic drying across most of the area of this habitat	

Site 12j		
1 93497 18967	Small mound of *Ptilium crista-castrensis* with scattered stems spread over 0.5m^2.	
Site 23		
1 n.a. (due to closed canopy)	Three stunted junipers adjacent to the west side of the track.	
2 & 3 n.a.	Scattered spikes of creeping lady's tresses are rare in the vicinity of these two target notes.	

4 n.a.	Red squirrel sighting.	
5 n.a.	Small stand of heath beneath pylons. Refer to Section	
6 n.a.	Twelve scattered junipers 0.5-1.5m high, scattered over an area approximately 40m^2.	
Site 25		
1 & 2 91519 22704	Refer to Sections 3.2.12.6 and 3.2.12.7. Re-sown area of improved grassland in the foreground, semi-improved neutral grassland in the mid-ground.	

3 91598 22668	An indistinctive dyke that is covered in vegetation comparable to the surrounding coniferous plantation field layer.	
4 91420 22451	Refer to Section 3.2.12.3.	
5 91429 22444	Earth – unidentified in the absence of bedding, droppings and/or a distinctive smell.	
6 91397 22314	Wood ants nest – the only one detected in this area of woodland during the survey. 40cm in diameter and 20cm high.	

7 91197 22310	Refer to Section3.2.12.10.	
8 91229 22314	Refer to Section 3.2.12.9.	
9 91059 22447	Small stand of willow carr with a canopy of grey willow. Understory suppressed by shading from the canopy and leaf litter but includes marsh bedstraw, soft rush, white sedge and yellow iris.	
10 91059 22447	Refer to Section 3.2.12.10.	

10 91009 22175	Refer to Section 3.2.12.7.	
Site 25		
1 90543 23168	Small, oligotrophic pond with open water succeeding to a floating raft of *Sphagnum*-dominated vegetation with *Calliergon giganteum, Sphagnum fimbriatum, S. girgensohnii, S. mucronatum* and *S. palustre*; and bog myrtle, cross-leaved heath, crowberry and tormentil. S. capillifolium and S. papillosum have established where the raft is more consolidated and in the process of shifting to an ombrogenous water supply.	
Site 34c		
1 98027 24953	Refer to Section 3.2.16.3.	
2 14521 91329	This small area, a mosaic of semi-natural, broad-leaved woodland and tall ruderal habitat is relatively diverse. The canopy is dominated by birch and grey willow. The field layer has abundant common bent and frequent to occasional: cleavers germander speedwell, greater stitchwort, hogweed, nettles, pignut, ragwort, sorrel, tormentil, tufted hair-grass, valerian and Yorkshire fog. The mosses *Brachythecium rutabulum, Kindbergia praelongum, Rhytidiadelphus triquetrus, Scleropodium purum* and *Thuidium tamariscinum* are all frequent in a	

	continuous moss layer that extends across the ground and boles of the trees.	
Site 34d		
1 99867 25278	Small stand of tall ruderal habitat (field thistle-dominated) and some encroachment by bracken.	
2 99918 25241	Mound of boulders of associated with tall ruderal habitat (dominated by broad-leaved dock, field thistle and nettles.	

APPENDIX B

Species List

HIGHER PLANTS

Vernacular Name	Scientific Name
Annual meadow-grass	*Poa annua*
Alpine rush	*Juncus alpinoarticulatus*
Angelica	*Angelica sylvestris*
Articulated rush	*Juncus articulatus*
Ash	*Fraxinus excelsior*
Aspen	*Populus tremula*
Autumn hawk's-bit	*Leontodon autumnalis*
Beech	*Fagus sylvaticus*
Bell heather	*Erica cinerea*
Bent velvet	*Agrostis canina*
Birches	*Betula* spp.
Bird's-foot trefoil	*Lotus corniculatus*
Bird cherry	*Prunus padus*
Black sedge	*Carex nigra*
Black willow	*Salix nigricans*
Bladder sedge	*Carex vesicaria*
Blaeberry	*Vaccinium myrtillus*
Bog asphodel	*Narthecium ossifragum*
Bog myrtle	*Myrica gale*
Bog stitchwort	*Stellaria uliginosa*
Broad-leaved dock	*Rumex obtusifolius*
Broad-leaved pondweed	*Potamogeton natans*
Broad buckler-fern	*Dryopteris dilatata*
Brooklime	*Veronica beccabunga*
Bugle	*Ajuga repens*
Bulbous rush	*Juncus bulbosus*
Carnation grass	*Carex panicea*
Chickweed	*Stellaria media*
Chickweed wintergreen	*Trientalis europaea*
Cock's-foot	*Dactylis glomerata*
Common bent	*Agrostis capillaris*
Common butterwort	*Pinguicula vulgaris*
Common cotton-grass	*Eriophorum angustifolium*
Common field speedwell	*Veronica persica*
Common mouse-ear	*Cerastium fontanum*
Common sorrel	*Rumex acetosa*
Common yellow-sedge	*Carex viridula* subsp. *oedocarpa*
Corn spurrey	*Spergula arvensis*
Creeping bent	*Agrostis stolonifera*
Creeping buttercup	*Ranunculus repens*
Creeping soft-grass	*Holcus mollis*
Creeping willow	*Salix repens*
Crested dog's-tail	*Cynosurus cristatus*
Cross-leaved heath	*Erica tetralix*
Crowberry	*Empetrum nigrum*
Creeping lady's-tresses	*Goodyera repens*
Cuckoo flower	*Cardamine pratensis*
Daisy	*Bellis perennis*
Dandelion	*Taraxacum officinale* agg.
Deer-grass	*Trichophorum caespitosum*
Devil's-bit scabious	*Succisa pratensis*
Dog's mercury	*Mercurialis perennis*
Dog rose	*Rosa canina*
Eared willow	*Salix aurita*
Elder	*Sambucus nigra*
Eyebright	*Euphrasia officinalis* agg.
False oat-grass	*Arrhenatherum elatius*
Field forget-me-not	*Myosotis arvensis*
Field horsetail	*Equisetum arvense*
Field thistle	*Cirsium arvense*
Field woodrush	*Luzula campestris*
Flea sedge	*Carex pulicaris*
Flöte grass	*Glyceria fluitans*
Fox-and-cubs	*Pilosella aurantiaca*
Frog rush	*Juncus bufonis*
Germander speedwell	*Veronica chamaedrys*
Goat willow	*Salix caprea*
Gorse	*Ulex europaea*
Greater stitchwort	*Stellaria holostea*
Greater woodrush	*Luzula sylvatica*
Green-ribbed sedge	*Carex binervis*
Grey Willow	*Salix cinerea*
Ground ivy	*Glechoma hederacea*
Fragrant orchid	*Gymnadenia conopsea*
Greater bird's-foot trefoil	*Lotus uliginosus*
Hairy bittercress	*Cardamine hirsuta*
Hairy lady's-mantle	*Alchemilla filicaulis*
Hard fern	*Blechnum spicant*
Hare's-tail bog-cotton	*Eriophorum vaginatum*
Hawthorn	*Crataegus monogyna*
Heath bedstraw	*Galium saxatile*
Heath grass	*Danthonia decumbens*
Heath rush	*Juncus squarrosus*
Heath speedwell	*Veronica officinalis*
Heath-spotted orchid	*Dactylorhiza maculata*
Heather	*Calluna vulgaris*
Hoary plantain	*Plantago media*
Hogweed	*Heracleum sphondylium*
Intermediate water-starwort	*Callitriche hamulata*
Juniper	*Juniperus communis*
Knotweed	*Polygonum aviculare*
Lesser spearwort	*Ranunculus flammula*
Lousewort	*Pedicularis sylvatica*
Marsh arrow-grass	*Triglochin palustris*
Marsh bedstraw	*Galium palustre*
Marsh cinquefoil	*Potentilla palustris*
Marsh foxtail	*Alopecurus geniculatus*
Marsh hawk's-beard	*Crepis paludosa*
Marsh marigold	*Caltha palustris*

Marsh spike-rush	*Eleocharis palustris*
Marsh thistle	*Cirsium palustre*
Marsh violet	*Viola palustris*
Marsh willow-herb	*Epilobium palustre*
Mat grass	*Nardus stricta*
Meadow buttercup	*Ranunculus acris*
Meadow foxtail	*Alopecurus myosuroides*
Meadow vetchling	*Lathyrus pratensis*
Meadowsweet	*Filipendula ulmaria*
Melancholy thistle	*Cirsium heterophyllum*
Monkey flower	*Mimulus guttatus*
Northern bedstraw	*Galium boreale*
Oval sedge	*Carex ovalis*
Perennial rye-grass	*Lolium perenne*
Petty Whin	*Genista anglica*
Pignut	*Conopodium majus*
Pill sedge	*Carex pilulifera*
Procumbent pearlwort	*Sagina procumbens*
Purple moor-grass	*Molinia caerulea*
Quaking grass	*Briza media*
Ragged robin	*Lychnis flos-cuculi*
Ragwort	*Senecio jacobaea*
Red campion	*Silene dioica*
Red clover	*Trifolium pratense*
Red fescue	*Festuca rubra*
Reed canary-grass	*Phalaris arundinacea*
Ribwort plantain	*Plantago lanceolata*
Rose-bay willow-herb	*Chamerion angustifolium*
Rough-stalked meadow-grass	*Poa trivialis*
Round-leaved sundew	*Drosera rotundifolia*
Round-leaved wintergreen	*Pyrola rotundifolia*
Rowan	*Sorbus aucuparia*
Scot's pine	*Pinus sylvestris*
Selaginella	*Selaginella selaginoides*
Sheep's fescue	*Festuca ovina*
Sheep's sorrel	*Rumex acetosella*
Shepherd's purse	*Capsella bursa-pastoris*
Silverweed	*Potentilla anserina*
Sitka spruce	*Picea sitchensis*
Small cow-wheat	*Melampyrum sylvaticum*
Small-fruited yellow sedge	*Carex viridula* subsp. *viridula*
Smooth meadow-grass	*Poa pratensis*
Sneezewort	*Achillea ptarmica*
Soft rush	*Juncus effusus*
Soft bent	*Holcus mollis*
Sorrel	*Rumex acetosa*
Spear Thistle	*Cirsium vulgare*
Square-stemmed St John's Wort	*Hypericum tetrapterum*
Start sedge	*Carex echinata*
Stinging nettle	*Urtica dioica*
Sweet vernal grass	*Anthoxanthum odoratum*
Timothy	*Phleum pratense*
Tormentil	*Potentilla erecta*
Tufted hair-grass	*Deschampsia cespitosa*
Valerian	*Valerianella officinalis*
Velvet bent	*Agrostis canina*
Water forget-me-not	*Myosotis scorpioides*
Water horsetail	*Equisetum fluviatile*
Water mint	*Mentha aquatica*
Wavy bittercress	*Cardamine flexuosa*
Wavy hair-grass	*Deschampsia flexuosa*
White clover	*Trifolium repens*
White sedge	*Carex curta*
Wood anemone	*Anemone nemorosa*
Wood horsetail	*Equisetum sylvaticum*
Wood stitchwort	*Stellaria nemoreum*
Wood crane's-bill	*Geranium sylvaticum*
Yellow rattle	*Rhinanthus minor*
Yellow iris	*Iris pseudacorus*
Yorkshire-fog	*Holcus lanatus*

Cairngorms National Park Authority

LOCAL DEVELOPMENT PLAN PHASE 1 HABITAT SURVEYS: Braemar & Parliament Knowe

November 2010

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1. INTRODUCTION

1.1 Remit

EnviroCentre were commissioned by the Cairngorms National Park Authority to undertake a series of Phase 1 Habitat Surveys of potential development sites submitted for approval as part of the Local Development Plan (LDP). This report presents the findings of those surveys.

1.2 Aim and objectives

The **aim** of the survey and reporting is to identify and describe the nature of the habitats present within each of the LDP sites.

The **objectives** are therefore to:

- Provide a habitat map;
- Provide a plant species list and the details of notable plant taxa;
- Determine the potential presence and activity of protected faunal species;
- Assess the conservation value of the habitats;
- Identify any potential constraints to the development of the site; and
- Make recommendations for any further surveys.

In addition, a further objective is to provide a desk-based assessment of the presence of any designated sites within a 5km radius of the sites and of any notable fauna or flora that may be present on the sites.

2. METHOD

2.1 Desk study

A search was conducted of the appropriate sources[1], within a 5.0km radius from the site, for existing information on:

- Statutorily designated sites i.e. Special Protection Areas SPA, Special Areas of Conservation SAC and Sites Special of Scientific Interest SSSI;
- Non-statutorily designated sites e.g. Ancient Woodland Inventory, Local Nature Reserves and Sites of Importance for Nature Conservation;
- Legally protected or notable species e.g. the presence of bat roosts or badgers; and,
- UK and Fife Local Biodiversity Action Plan Priority habitats and species.

The results of the desk study identify if the development will impact upon any designated areas or notable or protected species; inform the field survey; and provide information to guide actions and priorities for ecological mitigation and enhancement.

2.2 Phase 1 Habitat Survey

An Extended Phase 1 Habitat survey was undertaken in order to determine the nature of the habitats present that may be affected by the proposed developments and to enable the identification of suitable habitats for any protected species. An Extended Phase 1 Habitat survey is not designed to produce comprehensive evidence of protected species' presence but by identifying suitable habitats and direct or indirect signs of activity (such as droppings or prints), it does highlight where further surveys may be required for a more complete understanding of the site's ecology.

The objectives of the field survey and subsequent reporting are to:

1. produce a map of habitats for the site including a buffer zone of up to 500m;
2. 'target note' specific features of interest within the site;
3. obtain initial records of species of flora and fauna occurring within those habitats identified within the site boundary;
4. make an initial assessment of the presence or likely absence of species of conservation concern;
5. identify any potential legal and policy constraints relevant to the species and habitats found which may affect the development; and
6. evaluate the nature conservation value of the habitats on the site.

The set of Target Notes are included in Appendix A - these notes locate and describe specific features of ecological interest. A hand-held, Garmin GPS unit was used to locate each of these features on the national grid system. Their location is mapped in Figure 1 and they are described in Appendix A. A species list for all of the sites is provided in Appendix B.

[1] For the presence of designated sites, SNHi (www.snh.org.uk/snhi) and the Local Plan (www.scotborders.gov.uk) were consulted. The National Biodiversity Network Gateway was consulted for species records.

The Phase 1 survey and assessment respectively follow the Joint Nature Conservation Committee[2] and Institute of Ecology and Environmental Management guidelines[3].

Quantification of plant abundance

The DAFOR scale (Dominant > Abundant > Frequent > Occasional > Rare) is used throughout the report to express the cover of individual species in specified areas and/or vegetation units. Accordingly, such expressions of abundance relate only to the presence of the species within the site unless another geographical context is explicitly stated.

Nomenclature

Vernacular names are used throughout the report for the higher plants and these can be cross-referenced to the scientific name by reference to the species list compiled for the site that is included in Appendix B. Scientific names only are used for the moss and liverwort species because although vernacular names are now in existence, they are not in general usage. The standard floras for each of the major plant groups are used within the report[4].

[2] Joint Nature Conservation Committee 2003 Handbook for Phase 1 Habitat Survey. Revised reprint.
[3] Institute of Ecology and Environmental Management Undated. General advice on surveys and methods. Available online at: http://www.ieem.net/surveymethods.asp.
[4] Stace, C.A. 1997 New Flora of the British Isles. 2nd edition. Cambridge University Press, for higher plants; Smith, A.J.E. 2004 The moss flora of Britain and Ireland. 2nd edition. Cambridge University Press, for mosses; and Paton, J..A. 1999 The liverwort flora of the British Isles. Harley Books, Colchester, for liverworts.

3. RESULTS

3.1 Desk-based Study

3.1.1 Designated Sites

Numerous designations are present in the area around Braemar. These include designation of the Cairngorms National Park and National Scenic Area as well as designations for nature conservation such as Sites of Special Scientific Interest, Special Areas of Conservation and Special Protection Areas. Only the statutory designations for nature conservation are considered in the tabulated data below.

Unfortunately, due to the number of overlapping layers on SNH Sitelink and the lack of an option to switch specific layers on or off, it has not been possible to accurately measure the distance from each LDP site to each designated site. In fact, it proved impossible to locate the village itself beneath the layers without first placing the central cross in position before measuring the distance to each designation when the layers were added to the base map. The distance to the sites listed in Table 1 are therefore measured from this centre point which is just west of the bridge over the River Clunie.

Table 1: Designated sites located within 5km of the centre of Braemar

Site	Designation	Distance & Orientation	Designated Features
Statutorily designated sites			
Morrone Birkwood	SSSI & SAC	0.4 km; SW	**SSSI** • Bryophyte assemblage • Invertebrate assemblage • Moths • Sub alpine dry heath • Upland birch woodland • Vascular plant assemblage **SAC** • Alpine and subalpine heaths • Base-rich fens • Dry grasslands and scrublands on chalk or limestone • Geyer's whorl snail (Vertigo geyeri) • Hard-water springs depositing lime • High-altitude plant communities associated with areas of water seepage • Juniper on heaths or calcareous grasslands
River Dee	SAC	0.4 km NW to NE	• Atlantic salmon • Freshwater pear mussel • Otter

Table 1 continued.

Creag Clunie and the Lion's Face	SSSI	1.0 km; E	• Capercaillie (breeding) • *Elm gylalecta* lichen • Native pinewood • Scottish crossbill
Ballochbuie	SAC & SPA	1.0 km; E	**SAC** • Blanket bog • Bog woodland • Caledonian forest • Dry heaths • Otter • Crevice plants on acid rock • Crevice plants on base rich rock • Wet heathland with cross leaved heath **SPA** • Capercaillie (*Tetrao urogallus*), breeding • Scottish crossbill (*Loxia scotica*), breeding
Craig Leek	SSSI	2.1 km; W	• Bryophyte assemblage • Native pinewood • Springs • Sub alpine calcareous grassland • Tall herb ledge
Non-statutorily designated site			
Ancient Woodland Inventory		Various	• Ancient Woodland Sites are widespread in the vicinity of Braemar.

None of the LDP sites are contained within a designated area but Sites 31c, 31d and 31e are situated adjacent to the Morrone Birkwoods along their western edges. The former pair of sites (31c and 31d) are also adjacent to the River Dee SAC boundary which closely follows the northern boundary of the Morrone Birkwoods SAC.

Parliament Knowe has been assessed separately for its proximity to designated areas because it is situated to the north-west of Crathie, approximately 10km to the west of Braemar. The closest designated sites to this LDP site are 1km distant, as indicated in Table 2.

Table 2: Designated sites located within 5km of Site 35g (Parliament Knowe)

Site	Designation	Distance & Orientation	Designated Features
Statutorily designated sites			
The Maim	SAC	1.0 km; NE	• Dry heaths
Crathie Wood	SSSI	1.1 km; SE	• Native pinewood
Cairngorms Massif	SPA	3.0 km; S	• Golden eagle (breeding)

3.1.2 Notable species

The following table of notable species has been compiled from the JNCC collation of taxon designations[5] data available from the National Biodiversity Network Gateway[6] for the OS grid squares NO19 and NO29 in which the Braemar and Parliament Knowe LDP sites are located. Species that are not likely to be encountered in the lowland setting of the LDP sites have been excluded (i.e. those that are purely montane or alpine in their distribution).

Table 3: Notable fauna and flora recorded from the 10km grid squares (NO19 and NO29) in which the Braemar and Parliament Knowe LDP sites are located.

Notable Flora	Notable Mammal Fauna
(*Hypericum maculatum subsp. maculatum*)	Brown Hare (*Lepus europaeus*)
Aggregate-headed Hawkweed (*Hieracium aggregatum*)	Daubenton's Bat (*Myotis daubentonii*)
Alpine Rush (*Juncus alpinoarticulatus*)	Eurasian Red Squirrel (*Sciurus vulgaris*)
Bearberry (*Arctostaphylos uva-ursi*)	European Otter (*Lutra lutra*)
Bird's-nest Orchid (*Neottia nidus-avis*)	European Water Vole (*Arvicola amphibius*)
Black-bindweed (*Fallopia convolvulus*)	Mountain Hare (*Lepus timidus*)
Bluebell (*Hyacinthoides non-scripta*)	Pine Marten (*Martes martes*)
Bog Hair-grass (*Deschampsia setacea*)	Pipistrelle (*Pipistrellus pipistrellus sensu lato*)
Bog Orchid (*Hammarbya paludosa*)	
Bogbean (*Menyanthes trifoliata*)	Red Deer (*Cervus elaphus*)
Caledonian Hawkweed (*Hieracium caledonicum*)	Roe Deer (*Capreolus capreolus*)
Charlock (*Sinapis arvensis*)	West European Hedgehog (*Erinaceus europaeus*)
Chives (*Allium schoenoprasum*)	
Cloudberry (*Rubus chamaemorus*)	Wildcat (*Felis silvestris*)
Common Slender Eyebright (*Euphrasia micrantha*)	
Corn Mint (*Mentha arvensis*)	
Cowslip (*Primula veris*)	
Dwarf Birch (*Betula nana*)	
Dwarf Cornel (*Cornus suecica*)	
Euphrasia arctica subsp. borealis	
Few-flowered Sedge (*Carex pauciflora*)	
Field Gentian (Gentianella campestris)	
Fragrant Orchid (*Gymnadenia conopsea*)	
Frog Orchid (*Coeloglossum viride*)	
Gentianella amarella subsp. *septentrionalis*	
Globeflower (*Trollius europaeus*)	
Good-King-Henry (*Chenopodium bonus-henricus*)	
Great Sundew (*Drosera anglica*)	
Greater Butterfly-orchid (*Platanthera chlorantha*)	
Greater Yellow-rattle (*Rhinanthus angustifolius*)	
Gymnadenia conopsea subsp. *borealis*	
Hair Sedge (*Carex capillaris*)	
Hairy Stonecrop (*Sedum villosum*)	
Harebell (*Campanula rotundifolia*)	
Heath Cudweed (*Gnaphalium sylvaticum*)	

[5] Refer to http://www.jncc.gov.uk/page-3408 for further details. Accessed November, 2010.
[6] Refer to www.nbn.org.uk for further details. Accessed November 2010.

Heath Dog-violet (*Viola canina*)	
Heather (*Calluna vulgaris*)	
Hieracium completum	
Hieracium pseudocurvatum	
Hirsute Hawkweed (*Hieracium eximium*)	
Hoary Cinquefoil (*Potentilla argentea*)	
Hound's-tongue (*Cynoglossum officinale*)	
Intermediate Wintergreen (*Pyrola media*)	
Large-flowered Hemp-nettle (*Galeopsis speciosa*)	
Large-fruited Hawkweed (*Hieracium macrocarpum*)	
Least Water-lily (*Nuphar pumila*)	
Lesser Butterfly-orchid (*Platanthera bifolia*)	
Lesser Tussock-sedge (*Carex diandra*)	
Little Kneeling Eyebright (*Euphrasia confusa*)	
Maiden Pink (*Dianthus deltoides*)	
Melancholy Thistle (*Cirsium heterophyllum*)	
Miles's Hawkweed (*Hieracium milesii*)	
Moschatel (*Adoxa moschatellina*)	
Mountain Avens (*Dryas octopetala*)	
Narrow-leaved Hawkweed (*Hieracium pseudopetiolatum*)	
Northern Hawk's-beard (*Crepis mollis*)	
Northern Rock-cress (*Arabis petraea*)	
Petty Whin (*Genista anglica*)	
Primrose (*Primula vulgaris*)	
Purple Milk-vetch (*Astragalus danicus*)	
Purple Saxifrage (*Saxifraga oppositifolia*)	
Pyrola rotundifolia subsp. *rotundifolia*	
Rock Sedge (*Carex rupestris*)	
Rock Whitebeam (*Sorbus rupicola*)	
Rough-leaved Hawkweed (*Hieracium prenanthoides*)	
Scandinavian Small-reed (*Calamagrostis purpurea*)	
Serrated Wintergreen (*Orthilia secunda*)	
Shale Hawkweed (*Hieracium fratrum*)	
Sheathed Sedge (*Carex vaginata*)	
Shepherd's-needle (*Scandix pecten-veneris*)	
Short-stemmed Hawkweed (*Hieracium orithales*)	
Sibbaldia (*Sibbaldia procumbens*)	
Small Cow-wheat (*Melampyrum sylvaticum*)	
Small Cranberry (*Vaccinium microcarpum*)	
Small-white Orchid (*Pseudorchis albida*)	
Sommerfelt's Hawkweed (*Hieracium sommerfeltii*)	
Spignel (M*eum athamanticum*)	
Starwort Mouse-ear (*Cerastium cerastoides*)	
Twinflower (*Linnaea borealis*)	
Viola tricolor subsp. *tricolor*	
Welsh Poppy (*Meconopsis cambrica*)	
White Mustard (*Sinapis alba*)	
Wild Pansy (*Viola tricolor*)	
Wood Crane's-bill (*Geranium sylvaticum*)	
Yellow Saxifrage (S*axifraga aizoides*)	

3.2 Field Study

3.2.1 Site 31a

3.2.1.1 Notable species

Aspen; some limited summer bat roost potential.

3.2.1.2 General description

This site to the north of Braemar is used for grazing by sheep in its lower (northerly) half and by roe deer in its more elevated (southerly) half. Semi-improved grassland improved by grazing therefore predominates across the site and beneath the southerly stands of trees which are quite open and lacking a distinctly woodland field layer. The area of woodland in the north-west of the site is waterlogged and quite distinctive in this and the vegetation of its field layer.

Table 4: Habitats recorded within the Site 31a boundary: their JNCC code; title; and relative and absolute areas.

Habitat Code	Habitat Title	Area (ha)	Area (%)
A1.1.1	Woodland, broadleaved, semi-natural	2.6	37.1
B2.2	Neutral grassland, semi-improved	4.4	62.8
C3.1	Tall ruderal	0.01	0.1
	Totals	**7.0**	**100**

3.2.1.3 Woodland, broadleaved, semi-natural

The woodland cover in the south of the site (see Target Note 4) is situated on an elevated, well-drained position. The open canopy is dominated almost exclusively by birches with rare aspen (Least Threatened according to the 2001 IUCN criteria) and rowan. Beneath the canopy there is only a field layer with regeneration presumably prevented by the grazing of roe deer and potentially sheep. This homogeneity of the woodland is also suggestive of secondary origins.

Grazing of the field layer by roe deer and potentially by sheep has resulted in an indistinctive flora with pignut the only abundant and relatively distinctive woodland element. Other woodland taxa include rare chickweed wintergreen and wood geranium as well as the mosses *Polytrichastrum formosum* and *Thuidium tamariscinum*, occasionally. Otherwise the field layer is dominated by smooth meadow-grass and locally: field thistle.

The remaining flora includes a relatively diverse assemblage of common, widespread species including frequent to occasional: common mouse-ear, creeping bent, creeping buttercup, fox-and-cubs, germander speedwell, harebell, heath bedstraw, heath woodrush, ragwort, sheep's fescue, sorrel, sweet vernal grass, viviparous fescue, wavy hair-grass, yarrow and Yorkshire fog. It is accordingly somewhat richer in species than the grassland described above.

In the north-west of the site, on the lower-lying ground, the woodland cover retains a dominant canopy of birch but grey willow is occasional both within the canopy and beneath it as a shrub (see Target Note 5). This particular stand of woodland is further distinct from the woodland immediately to its south (described above) because of the waterlogged conditions that support a tall (≤ 50cm) growth of sedges. Bladder sedge is dominant with occasional to rare: flöte grass, marsh bedstraw, reed canary-grass, soft bent, soft rush, wavy hair-grass and Yorkshire fog. The mosses *Calliergonella cuspidata*, *Calliergon giganteum*, *Polytrichastrum commune*, *Rhytidiadelphus triquetrus*, *Thuidium tamariscinum* are occasional to rare on the ground and their cover is suppressed by the dense growth of sedge. On the trees, moss epiphytes are frequent, including: *Aulacomnium androgynum*, *Dicranum scoparium*, *D. fuscescens* and *Hypnum mammillatum*; and lichens of the genera *Alectoria*, *Parmelia*, *Pseudevernia* and *Usnea* are abundant.

3.2.1.4 Neutral grassland, semi-improved

The semi-improved grassland in the fields is dominated by common bent and smooth meadow-grass with signs of improvement evident in the presence of abundant perennial rye-grass and frequent white clover. Creeping buttercup and sweet vernal-grass are also abundant with frequent to occasional cock's-foot, common mouse-ear, crested dog's-tail, nettles, tufted hair-grass, wood stitchwort and Yorkshire fog.

The dense grass sward is indicative of continuous grazing in the past but at the time of survey, the fields were subject to very light grazing pressure. Accordingly the sward was relatively tall (up to *c.* 40cm) with many flowering heads in evidence (see Target Note 2).

3.2.1.5 Tall Ruderal

This small stand of tall ruderal vegetation (see Target Note 3) is dominated by nettles with rare individuals of cock's-foot and hogweed. It was not possible to determine at the time of the survey the reason for the dominance of nettles but it presumably relates to some combination of disturbance and/or nutrient enrichment.

3.2.2 Site 31b

3.2.2.1 Notable Species

Some limited summer bat roost potential.

3.2.2.2 General description

This site is located along the northern side of Chapel Brae, between residential housing and gardens, to the north of the village of Braemar. The eastern end is semi-improved neutral grassland that is maintained by irregular mowing and this grades into woodland including some heath-derived, floral elements in the west. The whole site slopes northward towards the Linn of Dee Road and River Dee.

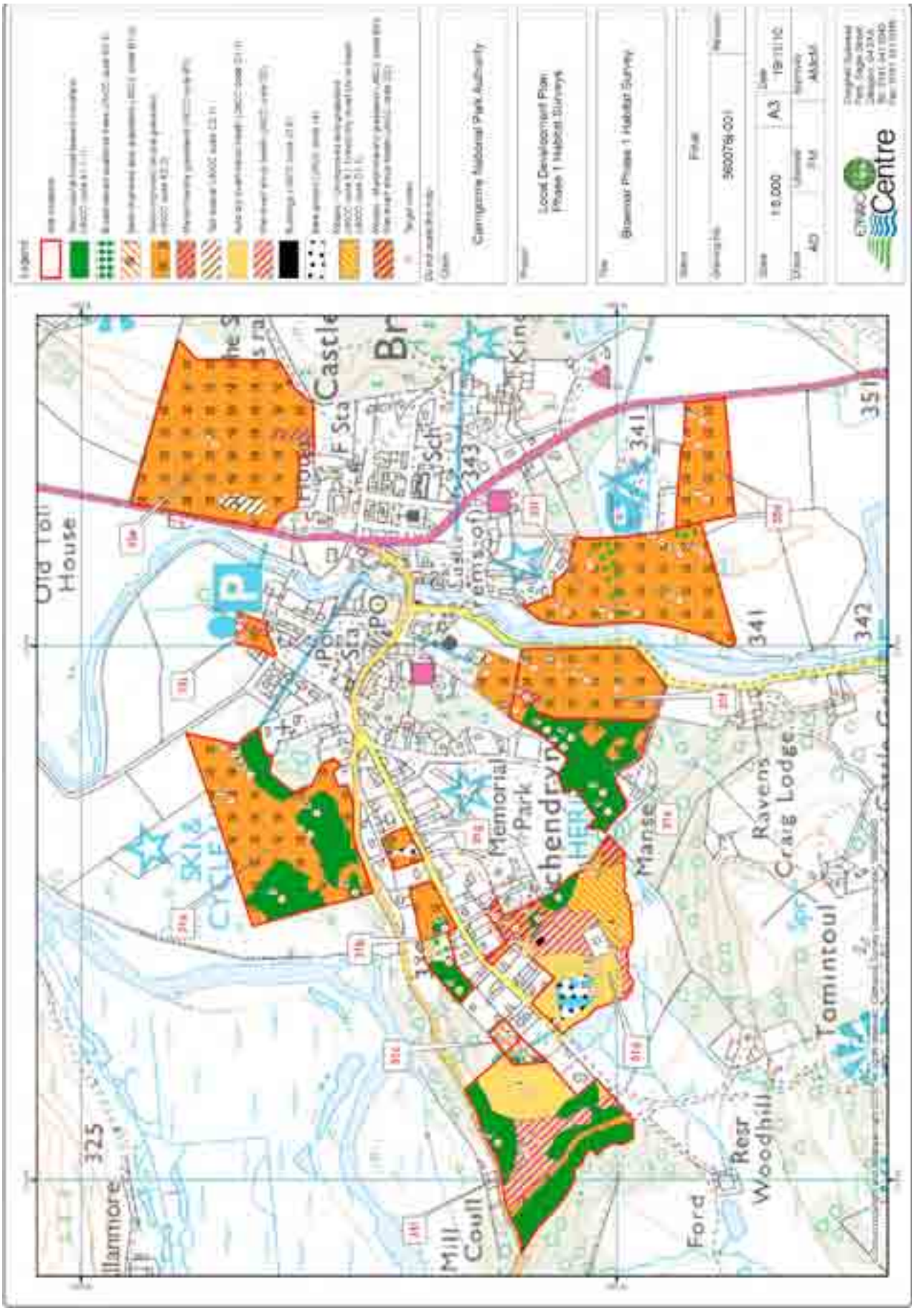

Figure 1: Phase 1 Habitat Survey Map (excluding Parliment Knowe).

3.2.2.3 Woodland, broadleaved, semi-natural and scattered, broad-leaved trees

The woodland canopy is relatively open to the east and it becomes more closed in the west. Birch is exclusively dominant in the canopy and beneath this the woodland structure is very simple, including only a field layer with any greater complexity or regeneration prevented by on-going grazing by rabbits (see Target Note 3) and presumably, deer. In addition, it is probable that this area of woodland is of secondary origin, according to the homogeneity of its age and structural composition.

The field layer is dominated by grassland species with some heath elements. It is locally closely cropped by rabbits that are also responsible for localised erosion (see Target Note 3). The derivation of the field layer from heath is apparent in the persistence of heather and other grazing sensitive heathland elements in a mosaic with grassland taxa. Woodland-specific species are rare and this attests further to the relatively recent origins of the woodland but the species-richness is relatively high because of the juxtaposition of grassland and heath taxa.

Sweet vernal grass is abundant with a relatively even mix of the following frequent to occasional species: cock's-foot, common bent, devil's-bit scabious, eyebright, germander speedwell, heather, mouse-ear chickweed, ragwort, ribwort plantain, self-heal, wavy hair-grass, white clover, wood geranium and Yorkshire fog; and the mosses: *Kindbergia praelongum*, *Rhytidiadelphus loreus*, *R. squarrosus* and *Scleropodium purum*.

Table 5: Habitats recorded within the Site 31b boundary: their JNCC code; title; and relative and absolute areas.

Habitat Code	Habitat Title	Area (ha)	Area (%)
A1.1.1	Woodland, broadleaved, semi-natural	0.4	33.3
A3.1	Scattered, broad-leaved trees	0.2	16.7
B2.2	Neutral grassland, semi-improved	0.5	41.7
D1.1	Acid, dry dwarf shrub heath	0.1	8.3
	Totals	**1.2**	**100**

3.2.2.4 Neutral grassland, semi-improved

The semi-improved neutral grassland is maintained by mowing and distinguished from improved or amenity grassland because of the more even mix and types of species that are present (e.g. perennial rye-grass is not dominant) and the presence of a high proportion of forbs.

No single species or group of species is dominant or particularly abundant and the following species are the most frequent: cock's-foot, daisy, ribwort plantain, smooth meadow-grass, sweet vernal grass and the moss *Rhytidiadelphus squarrosus* with occasional: eyebright, lady's bedstraw, meadow vetchling, pignut, ragwort, red clover, sorrel, white clover, wood stitchwort, wood geranium and yarrow.

3.2.2.5 Acid, dry dwarf shrub heath

This area of dry heath with smaller inclusions of grassland forming a mosaic has developed over the gravel of what was a borrow pit (see Target Note 2). It is relatively species poor and cropped by grazing rabbits. Despite this, it retains distinctive, floral elements including the dominant heather and frequent to occasional bell heather, devil's-bit scabious, eyebright, heath speedwell, petty whin and tormentil.

3.2.3 Site 31c

3.2.3.1 Notable species

None.

3.2.3.2 General description

This small site incorporating an area of grassland is situated behind houses that front onto Chapel Brae and it also includes a small area of ruderal vegetation that has risen through the dumping of organic garden waste.

Table 6: Habitat recorded within the Site 31c boundary: their JNCC code; title; and relative and absolute areas.

Habitat Code	Habitat Title	Area (ha)	Area (%)
B1.2	Acid grassland, semi-improved	0.4	100

3.2.3.3 Acid grassland, semi-improved

This area of acid grassland (see Target Note 1) is dominated by red fescue and common bent with abundant devil's bit scabious, eyebright and hoary plantain. It has been improved and influenced by trampling, mowing and the dumping of organic waste. Tall ruderal vegetation dominated by nettles and field thistle is prominent where organic waste has been dumped and the trampling pressure is least; and domestic rhubarb is present, presumably as a garden-escape deposited in waste.

3.2.4 Site 31d

3.2.4.1 Notable species

Fragrant orchid and Round-leaved wintergreen.

3.2.4.2 General description

Situated on the edge of the western edge of the village of Braemar, this relatively large site primarily includes wet and dry heath habitat whose respective presence reflects the topographic variation. In addition, there is: woodland, small areas of grassland, buildings and associated access and parking.

Table 7: Habitats recorded within the Site 31d boundary: their JNCC code; title; and relative and absolute areas.

Habitat Code	Habitat Title	Area (ha)	Area (%)
A1.1.1	Woodland, broadleaved, semi-natural	0.3	6.4
B5/D2.2	Marshy grassland / wet dwarf shrub heath mosaic	1.8	38.3
D1.1	Acid, dry dwarf shrub heath	1.2	25.5
D2	Wet dwarf shrub heath	1.0	21.3
J4	Bare ground	0.4	8.5
	Totals	**4.7**	**100.0**

3.2.4.3 Woodland, broadleaved, semi-natural

Woodland on the site is generally rather species-poor. In the case of the area identified by Target Note 6, this is because of the dense shrub layer underlying the birch-dominated canopy and the former has recently been thinned although at the time of survey, the field layer had yet to demonstrate any response to this management. The field layer of this stand of woodland is composed of an eclectic mix of woodland, heath and ruderal species that are generally rather occasional in their occurrence and includes: bramble, bugle, chickweed wintergreen, green-ribbed sedge, hard fern, heath bedstraw, heather, tormentil, heath woodrush, meadowsweet and wood anemone. Mosses are scarce and include: *Atrichum undulatum, Dicranum scoparium, Leucobryum glaucum, Rhytidiadelphus triquetrus* and *Thuidium tamariscinum*.

The small stand of birch-dominated trees designated by Target Note 7 is too small and open to have a distinctive woodland field layer with exception to the presence of occasional small cow-wheat that suggests this is a relict stand. Sweet vernal-grass is abundant here and the following species are frequent to occasional: blueberry, cowberry, eyebright, heath violet, juniper, mat grass, ragwort, tormentil, wavy hair-grass as well as the mosses: *Dicranum scoparium, Hylocomium splendens* and *Rhytidiadelphus triquetrus*. Bird cherry, larch and rowan are occasionally present in the canopy in addition to the birch.

3.2.4.4 Marshy grassland / wet dwarf shrub heath mosaic

This area of mosaic is topographically diverse and lightly grazed by deer so that grassland species are prominent within the wet heath community prevalent across other parts of the site. Soft rush is dominant in the wetter depressions with abundant cross-leaved heath. The distinctive grassland species include, in addition to the wet heath species listed below: creeping bent, devil's-bit scabious, quaking grass, sorrel, self heal, sweet verbal grass, wood horsetail, Yorkshire fog. In addition, the presence of bog stitchwort and water forget-me-not reflects the nutrient enrichment of the more marginal areas of wet heath and the mosses *Philonotis fontana* and *Polytrichum commune* are noticeably frequent in the same situation.

3.2.4.5 Acid, dry dwarf shrub heath

The higher, more freely-draining parts of the site are clothed in heather-dominated, dry dwarf shrub heath whose stature is very low (in the range of 10-15cm tall – see Target Note 2). The reasons for this are not immediately apparent in the absence of signs of grazing (such as dung) but it may relate to the relatively continental climatic conditions that prevail in this vicinity.

As well as the dominant heather, there is a limited range of associates that includes the round-leaved wintergreen (*Pyrola rotundifolia* subsp. *rotundifolia*) which is classified as Near Threatened according to the 2001 IUCN criteria and Nationally Scarce in a UK context. Other species in the heath include frequent to occasional bell heather, blueberry, cowberry, fragrant orchid (Least Threatened according to the 2001 IUCN criteria), juniper, mat grass, petty whin and pill sedge. The mosses and liverwort *Dicranum scoparium, Hylocomium splendens, Hypnum jutlandicum, Leucobryum glaucum, Ptilidium ciliare* and *Rhytidiadelphus triquetrus* are frequent to occasional. Species of the lichen genus *Cladonia* are abundant although their growth form is rather diffuse.

In the south-easterly parts of the site the dry heath forms a mosaic with the wet heath described below.

3.2.4.6 Wet dwarf shrub heath

Wet, dwarf shrub heath is situated on the lower parts of the site over thin peat. It is very diverse and dominated by a relatively even mix of abundant bog asphodel, bog myrtle, cross-leaved heath, deer grass and heather (see Target Note 3).

As well as the dominant mix of species listed above, there are frequent to occasional: articulated rush, carnation grass, common bent, common yellow-sedge, creeping bent, eyebright, heath rush, heath-spotted orchid, lousewort, purple moor-grass, round-leaved sundew, sheep's fescue, small-fruited yellow sedge, Tormentil and viviparous fescue. Rare species (in the context of the site) also include a diverse array of species worthy of mention: autumn hawk's-bit, common butterwort, creeping willow, flea sedge, heath grass, marsh arrow-grass, common bog-cotton, eared willow, star sedge, soft rush, sneezewort.

The moss and liverwort flora is relatively diverse and dominated by bog-mosses (*Sphagnum*). The following species are frequent to occasional and indicative of the very wet conditions: *Campylium stellatum, Odontoschisma sphagni, Scorpidium scorpioides, Sphagnum capillifolium, S. compactum, S. cuspidatum, S. denticulatum, S. fuscum, S. mucronatum* and *S. papillosum*. Lichens of the genus *Cladonia* species are occasional in the drier parts of the wet heath.

3.2.5 Site 31e

3.2.5.1 Notable species

None.

3.2.5.2 General description

This site is primarily classified as broad-leaved woodland but the field layer is referable to semi-improved neutral grassland according to the species that are present and the absence of distinctive woodland indicators although this latter habitat type is only mapped in the largest clearings. In addition, there are small areas of wet heath that have generally been target-noted because they are too small to map. Grazing (presumably of livestock) has also been responsible for the composition of the grassland beneath the trees but the fencing currently surrounding this area maintains this factor at a low level of influence, primarily by the few roe deer that are present (according to the few droppings that were found).

Table 8: Habitats recorded within the Site 31e boundary: their JNCC code; title; and relative and absolute areas.

Habitat Code	Habitat Title	Area (ha)	Area (%)
A1.1.1	Woodland, broadleaved, semi-natural	2.2	88.0
B2.2	Semi-improved neutral grassland	0.3	12.0
	Totals	**2.5**	**100.0**

3.2.5.3 Woodland, broadleaved, semi-natural

The woodland habitat is composed of a variable canopy dominated by birch with rare rowan whose saplings are rather frequent in the field layer. The structure of the woodland is very simple with no shrubs and only a few saplings present between the field layer and the tree canopy and it is assumed that this is a legacy of the site's past use for grazing and the on-going, light grazing by roe deer. The open conditions also result in a poor cover of epiphytes and only crustose lichens are occasional with fruticose species rare.

The field layer is relatively species-poor and dominated by a limited number of grasses. It is referable to the semi-improved neutral grassland described in more detail in the following section.

3.2.5.4 Semi-improved neutral grassland

Although it is primarily mapped in the few continuous openings that exist within the woodland, this habitat is widespread beneath the relatively open canopy (see Target Note 1). Common bent, sweet vernal grass, smooth meadow-grass and Yorkshire fog are the most abundant species and they reflect the neutral conditions prevailing across the site, enhanced, at least in part, by the presence of birch as well as the sites' past management as pasture.

Devil's-bit scabious is locally abundant and the following species are frequent to occasional across the site amongst the dominant grasses: creeping buttercup, devil's-bit scabious, field woodrush, germander speedwell, ground ivy, heath violet, heath spotted-orchid, hogweed, knapweed, lady's bedstraw, marsh violet, pignut, ragwort, ribwort plantain, sorrel, white clover,

wood crane's-bill, yarrow. Ground ivy, pignut and wood crane's-bill are the only species in this list that are generally indicative of woodland habitat.

The mosses *Brachythecium rutabulum, Hylocomium splendens, Rhytidiadelphus squarrosus, R. triquetrus* and *Thuidium tamariscinum* are occasional to frequent in a patchy layer beneath the dense, grass-dominated sward.

3.2.6 Site 31f

3.2.6.1 Notable species

Some summer bat roost potential.

3.2.6.2 General description

Semi-improved, neutral grassland is the dominant habitat cover across this site but there are numerous, smaller areas and features of ecological interest including, drains, defunct hedgerow, marshy grassland and wet heath.

Table 9: Habitats recorded within the Site 31f boundary: their JNCC code; title; and relative and absolute areas.

Habitat Code	Habitat Title	Area (ha)	Area (%)
A1.2.1	Woodland, coniferous, semi-natural	0.1	2.9
B2.2	Semi-improved neutral grassland	3.2	94.1
B5	Marshy grassland	0.1	2.9
	Totals	**3.4**	**100.0**

3.2.6.3 Woodland, coniferous, semi-natural

This small area of Scot's pine-wood is presumed to be of secondary origin because of the even age of the pine trees (see Target Note 2) that suggests they may have arisen post-felling over the same length of time. In addition to Scot's pine, there are frequent rowan saplings and rare birch and lime, the latter presumably having been planted.

The shade and litter cast by the canopy has reduced the productivity of the ground cover so that bare earth is exposed and the grass-dominated sward is relatively open and of low stature. Red fescue is abundant with sheep's fescue prominent in areas of transition to bare earth. Other prominent grasses in the sward include common bent, creeping bent, sweet vernal grass, wavy hair-grass and Yorkshire fog. Small cow-wheat and wood sorrel are probably relicts of the past woodland cover and the remaining forbs include devil's-bit scabious and tormentil.

3.2.6.4 Semi-improved neutral grassland

This area of closely-grazed grassland habitat is dominated by abundant smooth meadow-grass and white clover with frequent to occasional: broadleaved dock, common mouse-ear, common bent, daisy, red clover and Yorkshire fog. The sward is rather species poor and the presence of other species is probable but difficult to determine due top the intensity of the grazing.

3.2.6.5 Marshy grassland

The two areas of marshy grassland within this site persist despite their proximity to drains. They have been heavily poached by cattle as well as sheep in the past although they have apparently recovered from this as evidenced by the abundance of silverweed in the area denoted by Target Note 5 (see also Target Note 4).

Sharp-flowered rush and Yorkshire fog are abundant in both areas as well as melancholy thistle in the area denoted by Target Note 4. The following species are frequent to occasional and either distinctive elements of this habitat (in comparison to the surrounding neutral grassland) or reach their greatest abundance here: angelica, creeping buttercup, field thistle, meadowsweet, sneezewort, sorrel and tufted hair-grass. Marsh spikerush is also a distinctive floral element within the area indicated by Target Note 5.

3.2.7 Site 31g

3.2.7.1 Notable species

None.

3.2.7.2 General description

This small site incorporates an area of mown, semi-improved grassland through which a hardcore track passes to access the adjacent housing along the Linn of Dee Road from Chapel Brae.

Table 10: Habitats recorded within the Site 31g boundary: their JNCC code; title; and relative and absolute areas.

Habitat Code	Habitat Title	Area (ha)	Area (%)
B2.2	Semi-improved neutral grassland	0.3	100.0
	Totals	**0.3**	**100.0**

3.2.7.3 Semi-improved neutral grassland

The relatively open sward of this area of grassland suggests that it is not mown on a frequent basis. It contains a surprisingly species-rich assemblage of common and widespread species. No particular species is dominant within the sward and only common bent is notably abundant. Otherwise, the following species are frequent to occasional in their appearance: annual meadow-grass, cock's-foot, common mouse-ear, creeping buttercup, dandelion, dog rose,

eyebright, field thistle, germander speedwell, lady's bedstraw, meadow vetchling, nettles, perennial rye-grass, pignut, ragwort, red clover, ribwort plantain, smooth meadow-grass, sorrel, sweet vernal grass, white clover, wood geranium, yarrow and Yorkshire fog.

3.2.8 Site 31i

3.2.8.1 Notable species

None.

3.2.8.2 General description

Situated between the River Dee and Morrone Birkwood, this north-facing site is relatively diverse in terms of the range of habitats that are included within its boundary. These include wet and dry heath, and broadleaved, semi-natural woodland that is present as continuous extents and as scattered trees. The site slopes to the north and from the west, towards the River Dee, with higher drier ground therefore to the south and west and wetter, lower ground to the north. A track just inside the western boundary of the site facilitates pedestrian access.

Table 11: Habitats recorded within the Site 31i boundary: their JNCC code; title; and relative and absolute areas.

Habitat Code	Habitat Title	Area (ha)	Area (%)
A1.1.1	Woodland, broadleaved, semi-natural	2.4	43.6
B2.2	Semi-improved neutral grassland	0.3	5.5
D1.1	Acid, dry dwarf shrub heath	1.5	27.3
D2	Wet dwarf shrub heath	1.3	23.6
	Totals	**5.5**	**100.0**

3.2.8.3 Woodland, broadleaved, semi-natural

The woodland across the site is dominated almost exclusively by birches in a relatively open conformation. Accordingly, a distinctive woodland field layer is lacking. Instead, the field layer vegetation is very complex with a mosaic of the wet and dry heath communities (described below) where the canopy is more open, and acidic and neutral grassland species where the canopy is more closed (see Target Note 5). This latter group of species includes: abundant common bent, mat grass and sweet vernal grass; and frequent to occasional creeping buttercup, lady's bedstraw, heath violet, northern bedstraw, quaking grass, ribwort plantain, self heal.

In addition to the dominant birches, there are occasional, rare rowan and the open nature of the woodland means that distinctive epiphytes are lacking although crustose and to a lesser extent, fruticose lichens are occasional on the trunks and limbs of the trees.

3.2.8.4 Semi-improved neutral grassland

A narrow strip of this grassland type is present along the course of the footpath. It contains common and widespread species resistant to trampling especially daisy and hoary plantain.

3.2.8.5 Acid, dry dwarf shrub heath

Dry heath occupies the higher parts of the site in the south-east (see Target Note 1). As elsewhere in the vicinity of Braemar, the height of the dominant heather canopy is relatively low and open and this facilitates the persistence of a moderately diverse range of associates. Bell heather, birch saplings, common bent, cowberry, eyebright, field woodrush, heath bedstraw, petty whin, red fescue, tormentil, viviparous fescue, wavy hair-grass are frequent to occasional. Cross-leaved heath, deer grass, devil's bit scabious, juniper, mat grass and pill sedge all occur rarely. The moss layer is relatively continuous and dominated by a relatively even mix of feather mosses including: *Hypnum cupressiforme, H. jutlandicum, Leucobryum glaucum, Pleurozium schreberi, Scleropodium purum* and *Rhytidiadelphus triquetrus.*

3.2.8.6 Wet dwarf shrub heath

This habitat is very species rich and it contains the same assemblage of species as described above for Site 31c, i.e. articulated rush, carnation grass, common bent, common yellow-sedge, creeping bent, eyebright, heath rush, heath-spotted orchid, lousewort, purple moor-grass, round-leaved sundew, sheep's fescue, small-fruited yellow sedge, Tormentil, viviparous fescue. Rare species (in the context of the site) also include a diverse array of species worthy of mention: common butterwort, creeping willow, flea sedge, heath grass, marsh arrow-grass, common bog-cotton, star sedge, soft rush, sneezewort.

The moss and liverwort flora is also relatively diverse and dominated by bog-mosses (*Sphagnum*). The following species are frequent to occasional and indicative of the very wet conditions: *Campylium stellatum, Odontoschisma sphagni, Scorpidium scorpioides, Sphagnum capillifolium, S. compactum, S. cuspidatum, S. denticulatum, S. fuscum, S. mucronatum* and *S. papillosum*. Lichens of the genus *Cladonia* species are occasional in the drier parts of the wet heath.

Small rills and occasional pools are frequent but with exception to the pools indicated by Target Note 4, they do not contain any obligate, aquatic species and instead, only the more hydrophilous species amongst those listed above, especially common bog-cotton. Freshwater sponge (*Spongilla lacustris*) is common in the more permanently inundated parts of the pools.

Small, relatively dry, heather-dominated 'islands' within the wet heath support occasional ant nests, usually in association with the birch trees.

3.2.9 Site 31j

3.2.9.1 Notable species

None.

3.2.9.2 General description

Semi-improved neutral grassland is the dominant habitat on this small site with lesser areas of willow scrub and marshy grassland in the vicinity of a partially vegetated drain that had recently been re-excavated at the time of survey.

Table 12: Habitats recorded within the Site 31j boundary: their JNCC code; title; and relative and absolute areas.

Habitat Code	Habitat Title	Area (ha)	Area (%)
B2.2	Semi-improved neutral grassland	0.3	75.0
B5	Marshy grassland	0.1	25.0
	Totals	**0.4**	**100.0**

3.2.9.3 Semi-improved neutral grassland

The semi-improved neutral grassland is subject to a low level of grazing by sheep that prevents the further encroachment of scrub. Common bent and sweet vernal-grass are abundant in the species-poor sward and the following species are frequent to occasional: articulated rush, daisy, field thistle, nettles, red fescue, smooth meadow-grass, tufted hair-grass, self-heal and yarrow. *Hylocomium splendens, Pleurozium schreberi, Rhytidiadelphus squarrosus* and *Scleropodium purum* are occasional in the discontinuous moss layer that is suppressed by the tall growth of grasses and forbs.

3.2.9.4 Marshy grassland

The marshy grassland is distinct from the semi-improved grassland in its less elevated position and the wet conditions underfoot. This results in the dominance of soft rush with occasional articulated rush, cuckoo flower, marsh willow-herb, meadowsweet, nettle and water mint and further associates derived from the semi-improved, neutral grassland assemblage listed above.

3.2.10 Site 35d

3.2.10.1 Notable species

None.

3.2.10.2 General description

This small site is dominated by semi-improved, neutral grassland that is used as pasture. A number of small features of minor ecological significance are included in target Notes 1 to 3.

Table 13: Habitats recorded within the Site 35d boundary: their JNCC code; title; and relative and absolute areas.

Habitat Code	Habitat Title	Area (ha)	Area (%)
B2.2	Semi-improved neutral grassland	2.1	100.0
	Totals	**2.1**	**100.0**

3.2.10.3 Semi-improved neutral grassland

In the easternmost of the two fields comprising this site the grazing management has been discontinued for at least one if not two seasons. Accordingly, the grass sward is relatively high (see Target Note 2) and with numerous flowering heads.

The grassland is dominated in the eastern field by common bent and smooth meadow-grass with frequent to occasional: autumn hawk's-bit, cock's-foot, common mouse-ear, creeping buttercup, germander speedwell, nettle, pignut, sorrel, ragwort, sweet cicely, sweet vernal grass, white clover and Yorkshire fog.

The westernmost field is more improved and this is evident in the abundance of smooth meadow-grass and the frequent appearance of perennial rye-grass. White clover is also more frequent and the remaining species are the same as those listed above albeit at a lower level of frequency. Daisy is also noticeably prominent although it is absent from the field to the east.

3.2.11 Site 35e

3.2.11.1 Notable species

None.

3.2.11.2 General description

This enclosed area is located on west-facing slopes above the River Dee. It is used as pasture and has been divided into three fields for this purpose. The composition of the dominant grassland habitat is relatively homogenous and other features of ecological note are scarce except for a small area of marshy grassland and a stand of tall ruderal species.

3.2.11.3 Semi-improved neutral grassland

A moderate degree of improvement is apparent in this grassland habitat that becomes less improved and slightly more acidic in nature towards the top of the slope because of the influence of leaching. Creeping buttercup, smooth meadow-grass and white clover are equally abundant and the frequent appearance of *Lolium perenne* is indicative of reseeding having taken place in the past. Additional species are rather more occasional in their appearance and include: common bent, common mouse-ear, dandelion, germander speedwell, meadow foxtail, nettles, sweet vernal grass and Yorkshire fog.

Table 14: Habitats recorded within the Site 35e boundary: their JNCC code; title; and relative and absolute areas.

Habitat Code	Habitat Title	Area (ha)	Area (%)
B2.2	Semi-improved neutral grassland	7.9	95.2
B5	Marshy grassland	0.1	1.2
C3.1	Tall ruderal	0.3	3.6
	Totals	**8.3**	**100.0**

3.2.11.4 Marshy grassland

The marshy grassland is situated in a shallow depression at the bottom of the slope on the southern boundary of the site. It is very wet underfoot with much standing water in evidence at the time of survey and no attempts appear to have been made in order to drain it.

Soft rush is the dominant species and between its tussocks there is a moderate diversity of relatively common, generally wetland species including: bog stitchwort, broadleaved dock, cuckoo flower, marsh willow-herb, sorrel, star sedge, water forget-me-not and Yorkshire fog. The mosses *Brachythecium rutabulum* and *Calliergonella cuspidata* are relatively frequent in the interstices between the higher plants.

3.2.11.5 Tall ruderal

The tall ruderal habitat is situated at the bottom of the slope towards the western edge of the site. It incorporates a dense stand of nettles and field thistle.

3.2.12 Site 35f

3.2.12.1 Notable species

None.

3.2.12.2 General description

This site is dominated by semi-improved, neutral grassland subject to various degrees of management. A stream flows from east to west across the middle of the site and into the River Dee just beyond the western margin. The stream is lined with tall-herb vegetation and a discontinuous line of trees (see Target Note 4). Scattered trees are also present on a rocky knoll in the south-east where the thin soil and drainage result in a grass sward that is rather more acidic than elsewhere on the site (see Target Note 8).

Table 15: Habitats recorded within the Site 35f boundary: their JNCC code; title; and relative and absolute areas.

Habitat Code	Habitat Title	Area (ha)	Area (%)
B2.2	Semi-improved neutral grassland	5.28	100.0
	Totals	**5.28**	**100.0**

3.2.12.3 Semi-improved neutral grassland

The area of grassland indicated by Target Note 1 is elevated and more free-draining than is the case in the adjacent areas of grassland. Consequently, as a consequence of drought stress, the sward is much more open and the dominance of *Rhytidiadelphus squarrosus* in the moss layer is immediately apparent. Only *Brachythecium rutabulum* and *Kindbergia praelongum* were rarely recorded from here in addition. This area of grassland is also affected by the dumping of organic and inorganic waste (such as boulders and old, scrap vehicles) and fires have been lit. The vegetation composition is similar to that described for Site 35d above but the less competitive and more stressful situation of the substrate results in a high frequency of eyebright, bird's-foot trefoil and yellow rattle.

The field indicated by Target Note 2 is currently unmanaged for agricultural purposes and this has resulted in a tall growth of grasses. The current usage of this field is for recreation, mostly dog-walking along worn paths because the tall grass growth limits the area's potential for other forms of activity.

The abundance of false oat-grass in this field reflects the abandonment of management over a number of years. Cock's-foot and Yorkshire fog are also abundant with a limited range of occasional associates including: creeping buttercup, germander speedwell, hogweed, meadow vetchling, nettles, ragwort and sorrel.

In the field indicated by Target Note 5, the context and grassland composition is the same as that defined for Target Note 4, Site 35d (see also Target Note 5 for this current site).

The raised mound in the south-east of the site, indicated by Target Note 7, is elevated and more free-draining than elsewhere on the site. The enhanced leaching that this creates has resulted in more acidic elements in the semi-improved neutral grassland. Moderate erosion and exposure of the underlying, mineral soil also permits the entrance of a number of ruderal species. As a consequence of these factors, sweet vernal grass is abundant within the grass sward and the following are frequent to occasional and distinctive to this particular area: crested dog's-tail, pignut, tormentil, wavy hair-grass, yarrow. The presence of common mouse-ear, corn spurrey and white deadnettle reflect the erosion that is a result of the steep slopes. The appearance of dog's mercury suggests that the few birch trees here (see Target Note 6) are a relict of a more continuous and extensive woodland cover in the past.

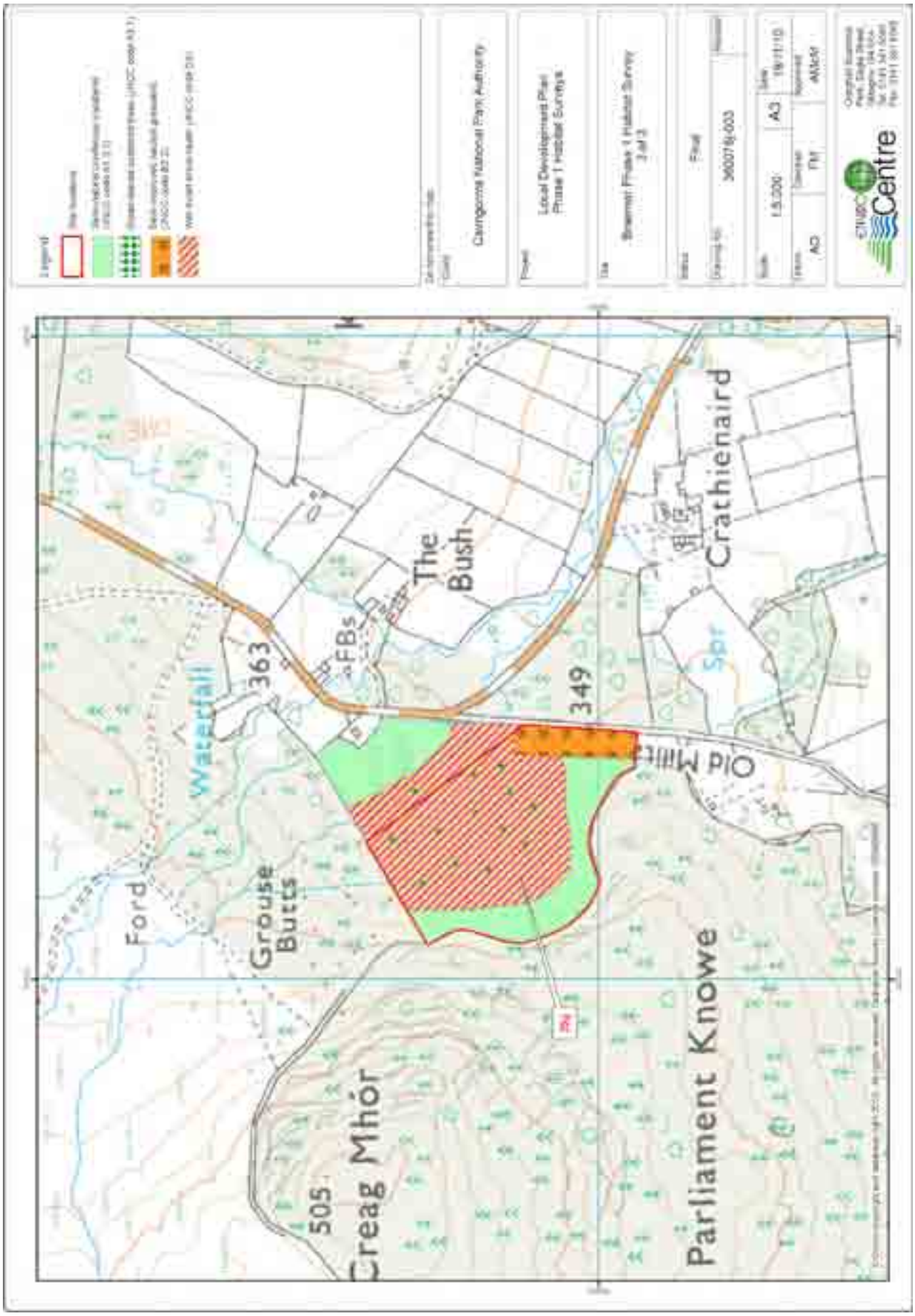

Figure 2: Phase 1 Habitat Map of Parliament Knowe (Site 35g)

3.2.13 Site 35g

3.2.13.1 Notable species

Juniper.

3.2.13.2 General description

Parliament Knowe is a relatively complex site that has been a croft and subjected to grazing in the past but this has now been abandoned for many years. The wet heath that currently dominates the site is therefore rather variable but species-poor and a small stand of semi-improved neutral grassland is situated close to the road on the eastern boundary of the site. This too has been abandoned for many years. Around the site there is extensive birch and Scot's pine woodland and the latter encroaches within the site boundary.

Table 16: Habitats recorded within the Site 35g boundary: their JNCC code; title; and relative and absolute areas.

Habitat Code	Habitat Title	Area (ha)	Area (%)
A1.2.1	Woodland, coniferous, semi-natural	2.4	26.4
B2.2	Semi-improved neutral grassland	0.9	9.9
D2	Wet dwarf shrub heath	5.8	63.7
	Totals	**9.1**	**100.0**

3.2.13.3 Semi-improved neutral grassland

This area of habitat has been unmanaged for some time and although open areas persist, there is significant encroachment by field thistle and rushes. Otherwise, Yorkshire fog is dominant with frequent to occasional: common bent, creeping buttercup, devil's-bit scabious, field forget-me-not, field woodrush, germander speedwell, nettles, ragwort, self-heal and smooth meadow-grass. In the absence of management, more acidic, heathy elements are starting to establish and these include rare heather, mat grass and tufted hair grass. In addition, birch saplings are occasionally present.

3.2.13.4 Wet dwarf shrub heath

Wet heath habitat extends over the greater part of the site. It is dominated by abundant bog myrtle and purple moor-grass with frequent to occasional: articulated rush, bog asphodel, bog stitchwort, common yellow sedge, creeping willow, devil's-bit scabious, eyebright, heath rush, marsh bedstraw, mat grass, quaking grass, selaginella, sharp-flowered rush, sneezewort, star sedge and tormentil.

Scattered across the site there are numerous saplings of birch, much more occasional Scot's pine and rare dog rose. Three Junipers (a Cairngorm and UK Biodiversity Action Plan species) are also present in close proximity to one another – see Target Note 1.

APPENDIX A

Target Notes and Photographs

Target Note No. & Grid Ref.[7]	Notes	Photograph
Site 31a		
1 14828 91838	Line of exposed aspens up to 18m tall. The exposure limits the growth of epiphytes to rare patches of *Hypnum mammillatum*, *Othotrichum affine* and *Parmelia saxatilis*. Abundant droppings and nettles at the base of the trees reveal their use for shelter by sheep. Suckers are frequent up to 20m from the natal trees but are limited to no more than 30cm height by grazing.	
2 n.a.	Refer to Section 3.2.1.4.	
3 14815 91701	Refer to Section 3.2.1.5.	

[7] All grid references refer to grid square 'H'.

4 n.a.	Refer to Section 3.2.1.3.	
5 14537 91542	Refer to Section 3.2.1.3.	
6 14594 91478	Moderate flushing picked out by abundant soft rush and marsh marigold with frequent to occasional bladder sedge, marsh bedstraw, marsh hawk's-beard, marsh willow-herb in addition to indistinctive species derived from the surrounding grassland/woodland field layer.	
7 14828 91838	A pair of roe deer were flushed from cover and moved off to the west.	n.a.

Site 31b		
1 14521 91329	Mature larch tree that is un-mown below with a stand of field thistle and one spear thistle. Potential summer bat roost.	
2 14410 91335	Refer to Section 3.2.2.5.	
3 14828 91838	Rabbit burrows. Only some of the burrows are active and it would appear that rabbits are re-colonising this locality after a marked population decline.	

4 n.a.	Refer to Section 3.2.2.4.	
Site 31c		
1 14275 91187	Refer to Section 3.2.3.3.	
Site 31d		
1 14828 91838	This small enclosure contains dry heath with regenerating birches (< 4m) and a lone Scot's pine. Heather is dominant with a diverse assemblage of frequent to occasional associates including bell heather birch saplings, bird's-foot trefoil, eyebright, petty whin, red fescue, wavy hair-grass and the mosses *Hylocomium splendens*, Pleurozium schreberi and *Rhytidiadelphus squarrosus.*	
2 14371 90985	Refer to Section 3.2.4.5.	

3 14425 90980	Refer to Section 3.2.4.5.	
4 14462 90981	Unusual stand of vegetation within the wet/dry heath mosaic that has been subject to mowing to create a car-parking area. The erosion that this has resulted in has exposed the underlying peat substrate through removal of the thin peat layer.	
5 14052 91167	Small stand of *c.* 20 field gentians distributed over an area of approximately $8m^2$. This species is listed as Vulnerable according to the 2001 IUCN criteria and is a UK Biodiversity Action Plan Priority Species.	
6 14544 91081	Refer to Section 3.2.4.3	
7 14547 91238	Refer to Section 3.2.4.3	n.a.

8 14485 91172	Refer to Section 3.2.4.4	
9 14430 91096	Refer to Section 3.2.4.6.	
Site 31e		
1 14689 90989	Refer to Section 3.2.5.4.	
2 14730 91008	Small area of marshy grassland dominated by tufted hair-grass with frequent meadowsweet and occasional soft rush as well as occasional, additional species derived from the surrounding grassland field layer.	

3 14824 91050	Small area (c. 100m^2) of wet heath. Purple moor-grass is abundant and the following species are frequent to occasional: articulated rush, black sedge, bog myrtle, common yellow-sedge, cross-leaved heath, devil's-bit scabious, flea sedge, marsh willow-herb, soft rush and star sedge. Amongst these species occasional mosses are found including: *Aulacomnium palustre, Campylium stellatum, Sphagnum capillifolium, S. mucronatum* and *S. papillosum.*	
4 14828 91838	Partially active drainage ditch fringed with soft rush and *Scorpidium scorpioides*. Drains to the area of wet heath described in target Note 3 and also contains occasional species derived from that habitat.	
Site 31f		
1 14865 91210	Periodically inundated, shallow 'pond'. Vegetated with a continuous, algal mat in which intermediate water-starwort and the moss *Calliergon giganteum* are abundant. Flöte-grass, marsh bedstraw and soft rush occur in a peripheral fringe.	

2 14893 91203	Refer to Section 3.2.6.3.	
3 14967 91162	Two mature limes and two mature aspens with numerous suckers emanating from the latter into the semi-improved grassland.	n.a.
4 14972 91193	Refer to Section 3.2.6.4.	
5 14912 91147	Refer to Section 3.2.6.4.	
6 n.a.	Refer to Section 3.2.6.3.	

7 14957 91124	Relict blackthorn hedgerow along a short length of dyke-and-ditch. Covered with a dense growth of *Parmelia* and with an understorey of tall ruderal vegetation dominated by nettles and field thistle as a result of trampling and nutrient enrichment from sheltering livestock. Soft rush abundant along the line of the ditch which was damp, with no open water, at the time of survey.	
8 14962 91044	Defunct drain choked with vegetation. Soft rush is abundant with occasional bladder sedge, bog stitchwort, flöte-grass, marsh marigold, marsh bedstraw and water forget-me-not.	
9 14807 90963	Small water course (*c.* 30cm wide) with riffles and pools over gravel and occasional cobbles. Choked with vegetation in its upper parts, especially within the woodland of Site 31e. The distinctive, marginal vegetation includes: articulated rush, brooklime, coltsfoot, flöte-grass, harebell, lesser spearwort, soft rush, marsh marigold, meadowsweet and sharp-flowered rush. The associated bryophyte community includes: *Calliergonella cordifolium, Marsupella emarginata, Philonotis fontana* and *Solenostemma cordifolium.*	

Site 31g		
1 14640 91414	Two mature larch and four, ten-year old oaks planted by a local within fencing that was being removed at the time of survey.	
Site 31i		
1 14275 91187	Refer to Section 3.2.8.5.	
2 14119 91151	Refer to Section 3.2.8.5.	
3 14119 91151	Refer to Section 3.2.8.6.	

4 14119 91151	Concentration of mud-bottomed bog pools that are evidently prone to drought during the summer according to their low floral and faunal diversity and abundance. Bog pondweed, common bog-cotton and *Sphagnum denticulatum* are locally present in the parts with greatest water depth.	
5 14052 91167	Refer to Section 3.2.8.3.	
Site 31		
1 15006 91646	Small stand of willow scrub with a single specimen each of grey willow and black willow. Despite the wet conditions, epiphytes are lacking except for occasional rosettes of the genus *Parmelia*.	

2 15006 91644	Open water where the drain has required to be recently cleared due to sedimentation and the growth of dense vegetation. Brooklime, flöte-grass and water forget-me-not have established as distinctive elements upon the sediment exposed by the excavation.	
Site 35d		
1 15390 90812	Small stand of nine birches and associated ruderal vegetation dominated by nettles as a consequence of trampling and nutrient enrichment from sheltering animals.	
2 n.a	Refer to Section 3.2.10.3.	

3 14828 91838	Refer to Section 3.2.10.3.	
Site 35e		
1 15296 91655	Spring head issuing into a soft rush lined ditch. Other distinctive species include occasional: bog stitchwort, flöte-grass, marsh foxtail, monkey flower and water forget-me-not.	
Site 35f		
1 14828 91838	Refer to Section 3.2.12.3	
2 15078 91034	Refer to Section 3.2.12.3.	

3 15048 91012	This corner of the field is lower and rather marshy as a consequence. This has resulted in the appearance of the tall herbs: knapweed, angelica, devil's-bit scabious, greater bird's-foot trefoil and melancholy thistle as well as tufts of soft rush tufted hair-grass.	
4 14828 91838	The stream that crosses the site has been canalized and it has become largely choked with vegetation so that only a narrow ribbon of open water is visible. Trees line the canalized banks – mostly bird cherry with occasional birch and rowan. The banks include a number of distinctive species that are not common elsewhere on the site: articulated rush, marsh willow-herb, meadowsweet, melancholy thistle, sharp-flowered rush and valerian. Within the channel, there are a number of semi-/aquatic species including: bog myrtle, flöte-grass, marsh marigold, the moss *Fontinalis antipyretica* (willow moss) and monkey flower as well as the mosses: Calliergon cuspidatum, *Sphagnum girgensohnii* and *S. mucronatum*.	
5 15070 90943	Refer to Section 3.2.12.3.	

6 15170 90797	Scattered birch trees that are relatively exposed and with a scarce cover of crustose lichens reflecting their situation.	
7 15169 90796	Refer to Section 3.2.12.3	
8 15211 90854	Birches and aspen forming a small area of woodland with a very open canopy above the more acidic, semi-improved neutral grassland on the top of the mound. Numerous aspen suckers are present in the vicinity of the aspens.	
Site 35g		
1 25249 96057	Three Junipers approximately 2m high. All of them are rather moribund and whether this is related to their age or growing conditions is not immediately apparent.	

APPENDIX B

Plant Species List

HIGHER PLANTS

Vernacular Name	Scientific Name
Annual meadow-grass	*Poa annua*
Alpine rush	*Juncus alpinoarticulatus*
Angelica	*Angelica sylvestris*
Articulated rush	*Juncus articulates*
Ash	*Fraxinus excelsior*
Aspen	*Populus tremula*
Autumn hawk's-bit	*Leontodon autumnalis*
Beech	*Fagus sylvaticus*
Bell heather	*Erica cinerea*
Bent velvet	*Agrostis canina*
Birches	*Betula* spp.
Bird's-foot trefoil	*Lotus corniculatus*
Bird cherry	*Prunus padus*
Black sedge	*Carex nigra*
Black willow	*Salix nigricans*
Bladder sedge	*Carex vesicaria*
Blaeberry	*Vaccinium myrtillus*
Bog asphodel	*Narthecium ossifragum*
Bog myrtle	*Myrica gale*
Bog stitchwort	*Stellaria uliginosa*
Broad-leaved dock	*Rumex obtusifolius*
Broad-leaved pondweed	*Potamogeton natans*
Broad buckler-fern	*Dryopteris dilatata*
Brooklime	*Veronica beccabunga*
Bugle	*Ajuga repens*
Bulbous rush	*Juncus bulbosus*
Carnation grass	*Carex panicea*
Chickweed	*Stellaria media*
Chickweed wintergreen	*Trientalis europaea*
Cock's-foot	*Dactylis glomerata*
Common bent	*Agrostis capillaris*
Common butterwort	*Pinguicula vulgaris*
Common cotton-grass	*Eriophorum angustifolium*
Common field speedwell	*Veronica persica*
Common mouse-ear	*Cerastium fontanum*
Common sorrel	*Rumex acetosa*
Common yellow-sedge	*Carex viridula* subsp. *oedocarpa*
Corn spurrey	*Spergula arvensis*
Creeping bent	*Agrostis stolonifera*
Creeping buttercup	*Ranunculus repens*
Creeping soft-grass	*Holcus mollis*
Creeping willow	*Salix repens*
Crested dog's-tail	*Cynosurus cristatus*
Cross-leaved heath	*Erica tetralix*
Cuckoo flower	*Cardamine pratensis*
Daisy	*Bellis perennis*
Dandelion	*Taraxacum officinale* agg.
Deer-grass	*Trichophorum caespitosum*
Devil's-bit scabious	*Succisa pratensis*
Dog's mercury	*Mercurialis perennis*
Dog rose	*Rosa canina*
Eared willow	*Salix aurita*
Elder	*Sambucus nigra*
Eyebright	*Euphrasia officinalis* agg.
False oat-grass	*Arrhenatherum elatius*
Field forget-me-not	*Myosotis arvensis*
Field horsetail	*Equisetum arvense*
Field thistle	*Cirsium arvense*
Field woodrush	*Luzula campestris*
Flea sedge	*Carex pulicaris*
Flöte-grass	*Glyceria fluitans*
Fox-and-cubs	*Pilosella aurantiaca*
Frog rush	*Juncus bufonis*
Germander speedwell	*Veronica chamaedrys*
Goat willow	*Salix caprea*
Gorse	*Ulex europaea*
Greater stitchwort	*Stellaria holostea*
Greater woodrush	*Luzula sylvatica*
Green-ribbed sedge	*Carex binervis*
Grey Willow	*Salix cinerea*
Ground ivy	*Glechoma hederacea*
Fragrant orchid	*Gymnadenia conopsea*
Greater bird's-foot trefoil	*Lotus uliginosus*
Hairy bittercress	*Cardamine hirsuta*
Hard fern	*Blechnum spicant*
Hare's-tail bog-cotton	*Eriophorum vaginatum*
Hawthorn	*Crataegus monogyna*
Heath bedstraw	*Galium saxatile*
Heath grass	*Danthonia decumbens*
Heath rush	*Juncus squarrosus*
Heath speedwell	*Veronica officinalis*
Heath-spotted orchid	*Dactylorhiza maculata*
Heather	*Calluna vulgaris*
Hoary plantain	*Plantago media*
Hogweed	*Heracleum sphondylium*
Intermediate water-starwort	*Callitriche hamulata*
Juniper	*Juniperus communis*
Lesser spearwort	*Ranunculus flammula*
Lousewort	*Pedicularis sylvatica*
Marsh arrow-grass	*Triglochin palustris*
Marsh bedstraw	*Galium palustre*
Marsh foxtail	*Alopecurus geniculatus*
Marsh hawk's-beard	*Crepis paludosa*
Marsh marigold	*Caltha palustris*
Marsh spike-rush	*Eleocharis palustris*
Marsh thistle	*Cirsium palustre*
Marsh violet	*Viola palustris*
Marsh willow-herb	*Epilobium palustre*
Mat grass	*Nardus stricta*

Meadow buttercup	*Ranunculus acris*
Meadow foxtail	*Alopecurus myosuroides*
Meadow vetchling	*Lathyrus pratensis*
Meadowsweet	*Filipendula ulmaria*
Melancholy thistle	*Cirsium heterophyllum*
Monkey flower	*Mimulus guttatus*
Northern bedstraw	*Galium boreale*
Perennial rye-grass	*Lolium perenne*
Petty Whin	*Genista anglica*
Pignut	*Conopodium majus*
Pill sedge	*Carex pilulifera*
Procumbent pearlwort	*Sagina procumbens*
Purple moor-grass	*Molinia caerulea*
Quaking grass	*Briza media*
Ragwort	*Senecio jacobaea*
Red campion	*Silene dioica*
Red clover	*Trifolium pratense*
Red fescue	*Festuca rubra*
Reed canary-grass	*Phalaris arundinacea*
Ribwort plantain	*Plantago lanceolata*
Rose-bay willow-herb	*Chamerion angustifolium*
Rough-stalked meadow-grass	*Poa trivialis*
Round-leaved sundew	*Drosera rotundifolia*
Round-leaved wintergreen	*Pyrola rotundifolia*
Rowan	*Sorbus aucuparia*
Scot's pine	*Pinus sylvestris*
Selaginella	*Selaginella selaginoides*
Sheep's fescue	*Festuca ovina*
Sheep's sorrel	*Rumex acetosella*
Shepherd's purse	*Capsella bursa-pastoris*
Silverweed	*Potentilla anserina*
Sitka spruce	*Picea sitchensis*
Small cow-wheat	*Melampyrum sylvaticum*
Small-fruited yellow sedge	*Carex viridula* subsp. *viridula*
Smooth meadow-grass	*Poa pratensis*
Sneezewort	*Achillea ptarmica*
Soft rush	*Juncus effusus*
Soft bent	*Holcus mollis*
Sorrel	*Rumex acetosa*
Spear Thistle	*Cirsium vulgare*
Square-stemmed St John's Wort	*Hypericum tetrapterum*
Start sedge	*Carex echinata*
Stinging nettle	*Urtica dioica*
Sweet vernal grass	*Anthoxanthum odoratum*
Timothy	*Phleum pratense*
Tormentil	*Potentilla erecta*
Tufted hair-grass	*Deschampsia cespitosa*
Valerian	*Valerianella officinalis*
Water forget-me-not	*Myosotis scorpioides*
Water horsetail	*Equisetum fluviatile*
Water mint	*Mentha aquatica*
Wavy bittercress	*Cardamine flexuosa*
Wavy hair-grass	*Deschampsia flexuosa*
White clover	*Trifolium repens*
Wood anemone	*Anemone nemorosa*
Wood horsetail	*Equisetum sylvaticum*
Wood stitchwort	*Stellaria nemoreum*
Wood crane's-bill	*Geranium sylvaticum*
Yellow rattle	*Rhinanthus minor*
Yorkshire-fog	*Holcus lanatus*

Extended Phase 1 Habitat Survey
Cairngorms Local Development Plan

Site: Killiecrankie H31

March 2011

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CONTENTS

Summary

1. As part of the process of considering the suitability of Site Killiecrankie H31, for inclusion into the Local Development Plan, the Cairngorms National Park Authority (CNPA) has commissioned Landcare NorthEast to undertake a desktop study and initial ecological survey.

2. A desktop study and subsequent ecological survey was conducted at Site Killiecrankie H31 in March 2011.

3. The proposed development site is located in the village of Killiecrankie and comprises approximately 0.83ha.

4. The main habitat is B1.2, semi-improved acid grassland with scattered mature trees.

5. No notable plant species (those of UK conservation concern - see UK list of Vascular Plants of Conservation Concern http://www.ukbap.org.uk - or those listed on the Cairngorms LBAP list of priority species) were noted.

6. The site may provide bat and badger foraging habitat.

1.0 Introduction

Background

1.1 In order to make an assessment on ecological impacts of developments of sites that have been presented for inclusion in the Cairngorms Local Development Plan, CNPA require desktop studies and ecological surveys of each site to be undertaken.

1.2 With regard to this, an extended Phase 1 survey and habitat suitability assessment was conducted at Site Killiecrankie H31**,**

1.3 The site is located at NN913629 in the village of Killiecrankie and comprises approximately 0.83ha**.**

1.4 The survey work was conducted by Steff Ferguson and Flora Grigor-Taylor, both experienced wildlife surveyors, chartered environmentalists and members of IEEM.

Existing Data

1.5 A review of the data held on the National Biodiversity Network (NBN) gateway was undertaken to identify species of conservation concern that have been recorded on the proposed development site.

1.6 NBN record search results:

Occurring within the 10km square in which the site is located:
- Goldeneye
- Twite
- Hen harrier
- Black grouse
- Capercaillie
- Redshank
- Lapwing
- Atlantic salmon
- Mason bee
- Eurasian badger
- Daubenton's bat

At 2km square level:
- Northern brown argus
- Pearl bordered fritillary
- Scottish wildcat
- Kentish glory

At 1km square level:
- Cousin German
- Red squirrel
- Otter (100m record in river west of site)
- Pipistrelle bat spp.
- Natterers bat
- Brown/long-eared bat spp. (100m record directly north of site)

Designated Sites

1.7 Site is located within the Loch Tummel National Scenic Area.

2.0 Survey

Method

2.1 An ecological survey was undertaken on the site in March 2011.

2.2 A Phase 1 Habitat Mapping & Protected Species Survey, also referred to as an Extended Phase 1 Ecological Survey, was undertaken for the site. Standard Phase 1 methodology was used, including detailed target notes of notable plant species (those of conservation concern; also those listed on the Cairngorms LBAP list of priority species).

2.3 An assessment of the habitat suitability within the proposed development site for mammal species was also undertaken.

2.4 The standard optimal time to undertake an Extended Phase 1 Survey is between April and the end of September. The survey time of early March was therefore outwith the optimal time, and where potential for botanical interest was noted, further survey may be necessary to provide comprehensive information on a site.

2.5 The habitats are described by the use of target notes where appropriate, annotated to the survey map (see Fig.1). Common species names and scientific names (Stace C (1997*) New Flora of the British Isles*. *Second Ed*. Cambridge University Press.) are given in the text below.

Results

2.6 The site slopes steeply down towards its western boundary.

2.7 A stony outcrop on top of hill suggests possible archaeological origin.

Vegetation

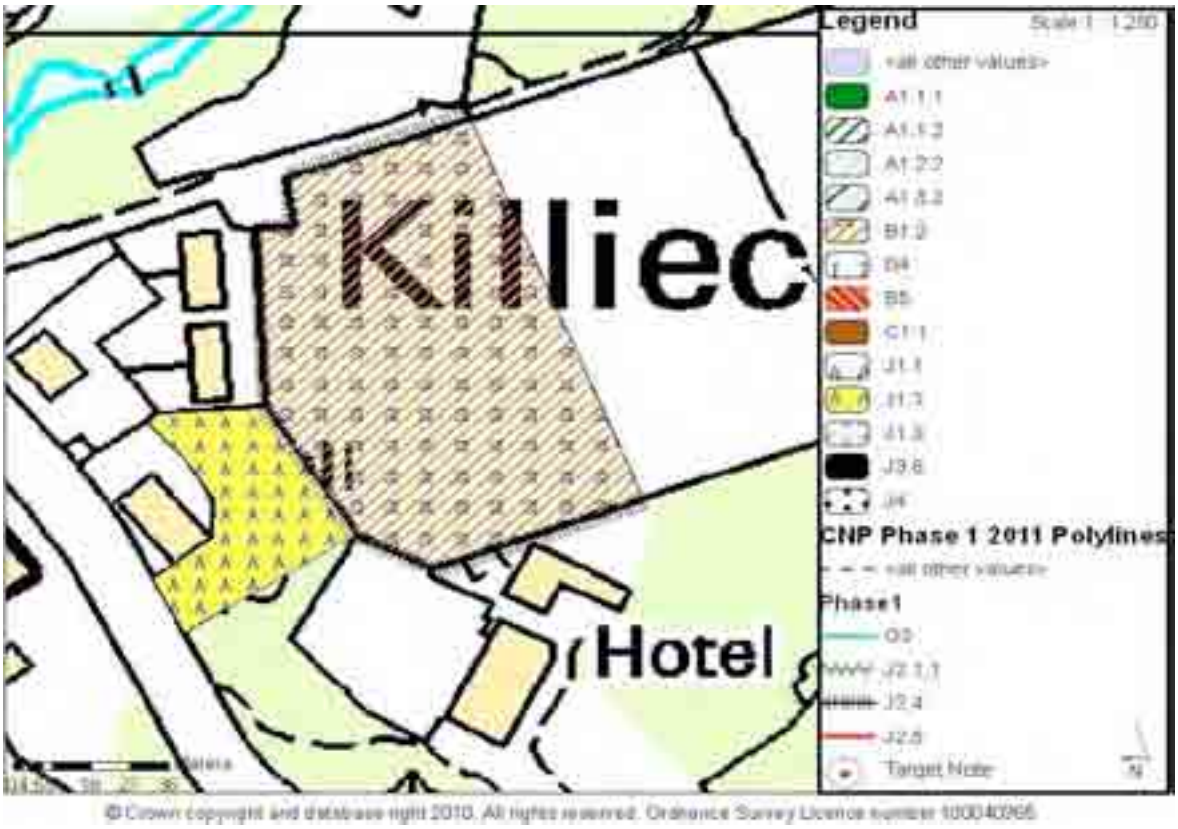
2.8 This site consists of B1.2, semi-improved acid grassland, with species including black knapweed (*Centaurea nigra),* tormentil (*Potentilla erecta),* germander speedwell (*Veronica chamaedrys)* and raspberry (*Rubus idaeus).* The field is currently used for horse grazing and extends east past the survey site boundary. Scattered trees on the site include mature oak (*Quercus* sp.), beech (*Fagus sylvatica*), birch (*Betula* spp.) and ash (*Fraxinus excelsior).*

2.9 A small protrusion on its western side is an area of landscaped amenity ground with steps down to the village hall.

Fauna

2.10 No species of conservation concern and/or listed on the Cairngorms LBAP list of priority species were noted on site.

Fig 1 Survey Map



3.0 Assessment of Habitat Suitability for Mammals

3.1 The site itself offers no suitable breeding habitat for otter, water vole or red squirrel. No badger setts were observed, although the site offers suitable foraging opportunities for this species.

3.2 NBN data advise that several bat species have been recorded in the vicinity of the site, which offers good foraging habitat for this group of mammals. Some of the mature trees on the site may have bat roost potential.

4.0 References

JNCC. 1990. *Handbook for Phase 1 habitat survey − a technique for environmental audit.* 2007 edition. Nature Conservancy Council

Stace, C.A. 1997. *New Flora of the British Isles*. 2nd Edition. Cambridge University Press.

APPENDIX 1 – SURVEY PHOTOGRAPHS

Stoney outcrop and mature trees at Killiecrankie H31

Improved grassland and mature trees at Killiecrankie H31

APPENDIX 3 – PHASE 1 CODES

PHASE 1 CODE	Description
A1.1.1	Broadleaved woodland - semi-natural
A1.1.2	Broadleaved woodland - plantation
A1.2.1	Coniferous woodland - semi-natural
A1.2.2	Coniferous woodland - plantation
A1.3.1	Mixed woodland - semi-natural
A1.3.2	Mixed woodland - plantation
A2.1	Scrub - dense/continuous
A2.2	Scrub - scattered
A3.1	Parkland/scattered trees – broad-leaved
A3.2	Parkland/scattered trees - coniferous
A3.3	Parkland/scattered trees – mixed
A4.1	Broadleaved woodland – recently felled
A4.2	Coniferous woodland – recently felled
A4.3	Mixed woodland – recently felled
B1.1	Acid grassland – unimproved
B1.2	Acid grassland – semi-improved
B2.1	Neutral grassland – unimproved
B2.2	Neutral grassland - semi-improved
B3.1	Calcareous grassland – unimproved
B3.2	Calcareous grassland – semi-improved
B4	Improved grassland
B5	Marsh/marshy grassland
C1.1	Tall herb & fen – bracken continuous
C1.2	Tall herb & fen – bracken scattered
C3.1	Other tall herb and fern - ruderal
D1.1	Dry dwarf shrub heath - acid
G2	Running water
J1.1	Cultivated/disturbed land – arable
J1.2	Cultivated/disturbed land – amenity grassland
J1.3	Cultivated/disturbed land – ephemeral/short perennial
J1.4	Cultivated/disturbed land – introduced shrub
J2.1.1	Intact hedge – native species rich
J2.1.2	Intact hedge – species poor
J2.3.2	Hedge with trees – species-poor
J2.4	Fence
J2.5	Wall
J2.6	Dry ditch
J3.6	Built-up areas - buildings
J4	Bare ground

CONTENTS

Summary

1. As part of the process of considering the suitability of Site Kincraig H1, for inclusion into the Local Development Plan, the Cairngorms National Park Authority (CNPA) has commissioned Landcare NorthEast to undertake a desktop study and initial ecological survey.

2. A desktop study and subsequent ecological survey was conducted at Site Kincraig H1 in March 2011.

3. The proposed development site is located at NH 835063 at the north edge of the settlement of Kincraig, and comprises approximately 5.58ha.

4. The main habitats are J1.1 re-seeded cultivated land and A1.1.1 semi-natural broadleaved woodland.

5. No notable plant species (those of UK conservation concern - see UK list of Vascular Plants of Conservation Concern http://www.ukbap.org.uk - or those listed on the Cairngorms LBAP list of priority species) were noted.

6. The site may provide bat and badger foraging habitat.

1.0 Introduction

Background

1.1 In order to make an assessment on ecological impacts of developments of sites that have been presented for inclusion in the Cairngorms Local Development Plan, CNPA require desktop studies and ecological surveys of each site to be undertaken.

1.2 With regard to this, an extended Phase 1 survey and habitat suitability assessment was conducted at Site Kincraig H1.

1.3 The site is located at NH 835063 at the north edge of the settlement of Kincraig, and comprises approximately 5.58ha.

1.4 The survey work was conducted by Steff Ferguson and Flora Grigor-Taylor, both experienced wildlife surveyors, chartered environmentalists and members of IEEM.

Existing Data

1.5 A review of the data held on the National Biodiversity Network (NBN) gateway was undertaken to identify species of conservation concern that have been recorded on the proposed development site.

1.6 NBN results

Occurring within the 10km square in which the site is located:

Goldeneye
Twite
Hen harrier
Scottish crossbill (2km square record within 200m)
Black grouse
Capercaillie
Redshank
Northern brown argus
Pearl bordered fritillary
Atlantic salmon
Twinflower (2km 500m SE)
Aspen bracket fungus
Aspen hoverfly
Freshwater pearl mussel
Blunt-leaved bristle moss
Scottish wildcat
Kentish glory (1km 200m south of site)
Cousin German (1km record 200m SW)
Otter
Badger

At 2km square level:

Lapwing
Pipistrelle spp.

At 1km square level:

Red squirrel
Brown/long-eared bat

Designated Sites

1.7 There are no statutorily designations on the land surveyed.

1.8 A number of designations have been assigned to ground sharing a boundary with the site:

An Area of Outstanding Natural Beauty (Cairngorms) begins at the site's southeast march, beyond the railway line.

Woods along the site's northeast boundary feature in the Ancient Woodland Inventory (AWI) as:
Moor of Alvie Semi-natural 3
Moor of Alvie Re-planted 1a &
Moor of Alvie Semi-natural 1a
Woods along the site's southeast boundary feature in the AWI as Ancient Woodland Semi-natural 2a – definitions shown below

Ancient woodland (1)

Sites shown as woodland on all available map sources from 1750 onwards and as semi-natural woodland on the 1750 'Roy' maps.

Long-established woodlands of semi-natural origin (2a)

Sites shown as semi-natural woodland in c.1860 (i.e. those on the OS First Edition maps) but not shown as woodland on the 1750 maps. These are woodlands that have apparently arisen between 1750 and 1860.

Other woodlands on 'Roy' woodland sites (3)

Sites which were shown as unwooded c.1860 but which were present as woodland in c.1750. Such sites have had only a short break in continuity of woodland cover.

2.0 Survey

Method

2.1 An ecological survey was undertaken on the site in March 2011.

2.2 A Phase 1 Habitat Mapping & Protected Species Survey, also referred to as an Extended Phase 1 Ecological Survey, was undertaken for the site. Standard Phase 1 methodology was used, including detailed target notes of notable plant species (those of conservation concern; also those listed on the Cairngorms LBAP list of priority species).

2.3 An assessment of the habitat suitability within the proposed development site for mammal species was also undertaken.

2.4 The standard optimal time to undertake an Extended Phase 1 Survey is between April and the end of September. The survey time of early March was therefore outwith the optimal time, and where potential for botanical interest was noted, further survey may be necessary to provide comprehensive information on a site.

2.5 The habitats are described by the use of target notes, annotated to the survey map (see Fig.1). Common species names and scientific names (Stace C (1997*) New Flora of the British Isles*. *Second Ed*. Cambridge University Press.) are given in the text below.

Results

2.6 The majority of the site comprises arable ground, currently in grass with evidence of recent cattle grazing. A new double stock fence and hedge has been established along the northern roadside boundary. A small open ditch and fence form the east boundary and the remaining two sides are stock fenced. The ground rises at the southeast corner of the site, which supports broadleaved woodland and is poorly fenced allowing access to grazing livestock.

Vegetation

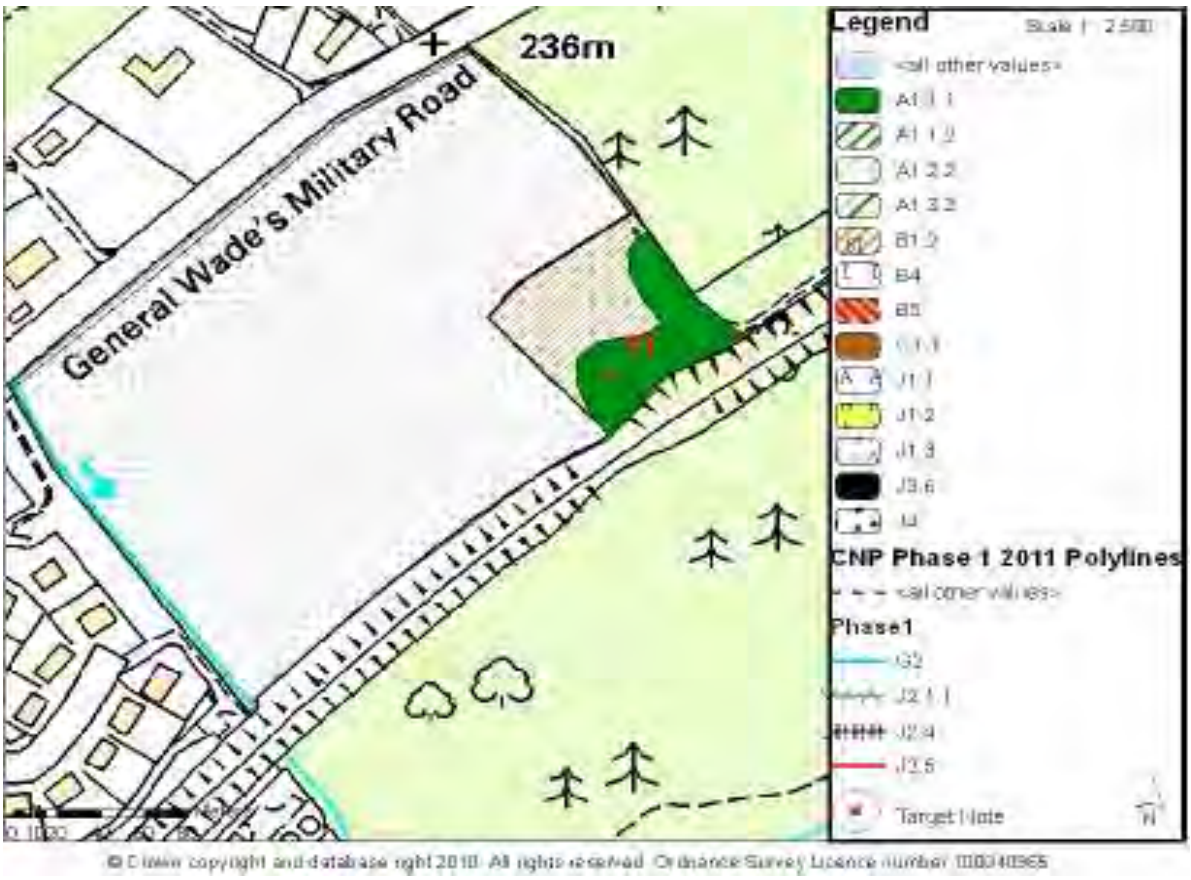
2.7 This site comprises cultivated arable ground (J1.1) with some soft rush thriving in low-lying wet dips.

2.8 The southeast corner supports A1.1.1 a stand of mature birch (*Betula* sp) with a species-rich ground layer B1.2 including black knapweed (*Centaurea nigra*), Germander speedwell (*Veronica chamaedrys)*, ribwort plantain (*Plantago lanceolata*), yarrow (*Achillea millefolium*), devil's-bit scabious (*Succisa pratensis*), common dog-violet (*Viola riviniana*), heath bedstraw (*Galium saxatile*), ragwort (*Senecio jacobaea*), common mousear (*Cerastium fontanum*), tufted hair-grass (*Deschampsia cespitosa*), Yorkshire fog (*Holus lanatus*), other fine grasses and *Juncus* spp. Birch seedlings were noted, suggesting natural regeneration is taking place.

Fauna

2.9 No species of conservation concern and/or listed on the Cairngorms LBAP list of priority species were noted on site.

Fig 1 Survey Map



3.0 Assessment of Habitat Suitability for Mammals

3.1 The site itself offers no suitable breeding habitat for otter, water vole or red squirrel. No badger setts or bat roosts were observed. There may be foraging opportunity for badger and bats here.

4.0 References

JNCC. 1990. *Handbook for Phase 1 habitat survey − a technique for environmental audit.* 2007 edition. Nature Conservancy Council

Stace, C.A. 1997. *New Flora of the British Isles*. 2nd Edition. Cambridge University Press.

APPENDIX 1 – TARGET NOTES

T1 - **NH 836 063**
The southeast corner supports a stand of mature birch (*Betula* sp) with a species-rich ground layer B1.2 including black knapweed (*Centaurea nigra*), Germander speedwell (*Veronica chamaedrys)*, ribwort plantain (*Plantago lanceolata*), yarrow (*Achillea millefolium*), devil's-bit scabious (*Succisa pratensis*), common dog-violet (*Viola riviniana*), heath bedstraw (*Galium saxatile*), ragwort (*Senecio jacobaea*), common mousear (*Cerastium fontanum*), tufted hair-grass (*Deschampsia cespitosa*), Yorkshire fog (*Holus lanatus*), other fine grasses and *Juncus* spp. Birch seedlings were noted, suggesting natural regeneration is taking place.

APPENDIX 2 – SURVEY PHOTOGRAPHS

Looking across J1.1 cultivated grass, towards southeast corner of site

Site's southeast corner, supporting stand of mature birch A1.1.1 Broadleaved semi-natural woodland with a species-rich ground layer B1.2 Acid grassland – semi-improved

APPENDIX 3 – PHASE 1 CODES

PHASE 1 CODE	Description
A1.1.1	Broadleaved woodland - semi-natural
A1.1.2	Broadleaved woodland - plantation
A1.2.1	Coniferous woodland - semi-natural
A1.2.2	Coniferous woodland - plantation
A1.3.1	Mixed woodland - semi-natural
A1.3.2	Mixed woodland - plantation
A2.1	Scrub - dense/continuous
A2.2	Scrub - scattered
A3.1	Parkland/scattered trees – broad-leaved
A3.2	Parkland/scattered trees - coniferous
A3.3	Parkland/scattered trees – mixed
A4.1	Broadleaved woodland – recently felled
A4.2	Coniferous woodland – recently felled
A4.3	Mixed woodland – recently felled
B1.1	Acid grassland – unimproved
B1.2	Acid grassland – semi-improved
B2.1	Neutral grassland – unimproved
B2.2	Neutral grassland - semi-improved
B3.1	Calcareous grassland – unimproved
B3.2	Calcareous grassland – semi-improved
B4	Improved grassland
B5	Marsh/marshy grassland
C1.1	Tall herb & fen – bracken continuous
C1.2	Tall herb & fen – bracken scattered
C3.1	Other tall herb and fern - ruderal
D1.1	Dry dwarf shrub heath - acid
G2	Running water
J1.1	Cultivated/disturbed land – arable
J1.2	Cultivated/disturbed land – amenity grassland
J1.3	Cultivated/disturbed land – ephemeral/short perennial
J1.4	Cultivated/disturbed land – introduced shrub
J2.1.1	Intact hedge – native species rich
J2.1.2	Intact hedge – species poor
J2.3.2	Hedge with trees – species-poor
J2.4	Fence
J2.5	Wall
J2.6	Dry ditch
J3.6	Built-up areas - buildings
J4	Bare ground

Extended Phase 1 Habitat Survey
Cairngorms Local Development Plan

Site: Newtonmore H1

March 2011

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CONTENTS

Summary

1. As part of the process of considering the suitability of Site Newtonmore H1, for inclusion into the Local Development Plan, the Cairngorms National Park Authority (CNPA) has commissioned Landcare NorthEast to undertake a desktop study and initial ecological survey.

2. A desktop study and subsequent ecological survey was conducted at Site Newtonmore H1, in March 2011.

3. The proposed development site is located on the outskirts of Newtonmore, at NN712984 and comprises approximately 11.8ha.

4. The main habitat is J1.1, improved farmland in rotation, currently reseeded grassland, with a small corner of A1.1.2, broad-leaved plantation woodland.

5. No notable plant species (those of UK conservation concern - see UK list of Vascular Plants of Conservation Concern http://www.ukbap.org.uk - or those listed on the Cairngorms LBAP list of priority species) were noted.

6. The site may provide bat and badger foraging habitat.

1.0 Introduction

Background

1.1 In order to make an assessment on ecological impacts of developments of sites that have been presented for inclusion in the Cairngorms Local Development Plan, CNPA require desktop studies and ecological surveys of each site to be undertaken.

1.2 With regard to this, an extended Phase 1 survey and habitat suitability assessment was conducted at Site Newtonmore H1.

1.3 The site is located on the outskirts of Newtonmore, at NN712984 and comprises approximately 11.8ha.

1.4 The survey work was conducted by Steff Ferguson and Flora Grigor-Taylor, both experienced wildlife surveyors, chartered environmentalists and members of IEEM.

Existing Data

1.5 A review of the data held on the National Biodiversity Network (NBN) gateway was undertaken to identify species of conservation concern that have been recorded on the proposed development site.

1.6 NBN results

Occurring within the 10km square the site is located in:

Goldeneye
Hen harrier
Black grouse
Capercaillie
Redshank
Netted mountain moth (1km record 200m SW & 200m E)
Northern brown argus
Pearl bordered fritillary
Aspen bracket fungus
Aspen hoverfly
Freshwater pearl mussel
Blunt-leaved bristle moss
Scottish crossbill (2km square record within 100m)
Scottish wildcat
Cousin German
Badger

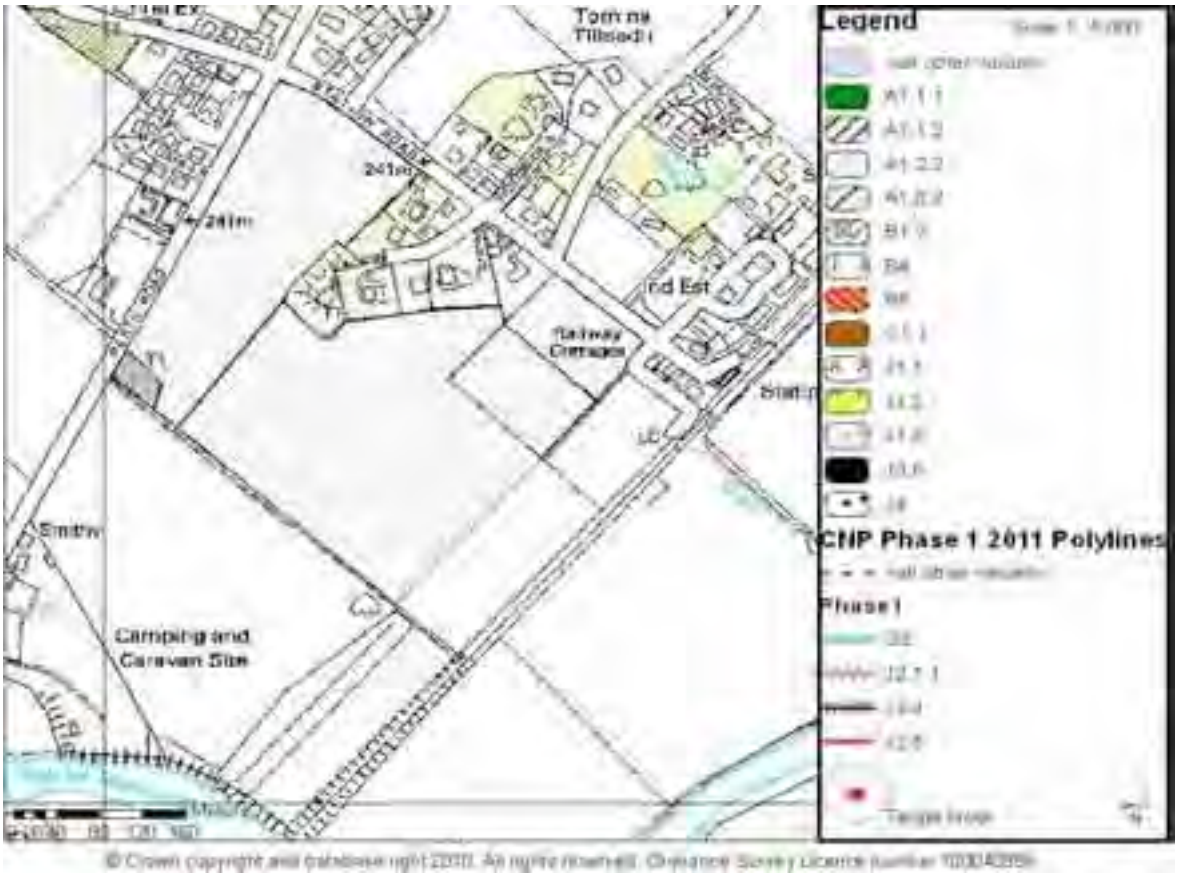
At 2km square level:

Twite
Lapwing
Atlantic salmon
Otter
Daubentons bat

Fauna

2.8 No species of conservation concern and/or listed on the Cairngorms LBAP list of priority species were noted on site.

Fig 1 Survey Map



3.0 Assessment of Habitat Suitability for Mammals

3.1 The site itself offers no suitable breeding habitat for otter, water vole, bat and red squirrel. No badger setts were observed. There may be foraging opportunity for badger and bats, particularly along garden and woodland edges.

4.0 References

JNCC. 1990. *Handbook for Phase 1 habitat survey − a technique for environmental audit.* 2007 edition. Nature Conservancy Council

Stace, C.A. 1997. *New Flora of the British Isles*. 2nd Edition. Cambridge University Press.

APPENDIX 1 – TARGET NOTES

T1 NJ 710984

Fenced off area on western most corner of field. Rubble screened by young plantation of broadleaf trees (A1.1.2). Main species observed: oak (*Quercus* spp.), rowan (*Sorbus aucuparia*) and birch (*Betula* spp.).

APPENDIX 2 – SURVEY PHOTOGRAPHS

Newtonmore H1 – Reseeded arable field

Small plantation woodland in corner of field (T1)

APPENDIX 3 – PHASE 1 CODES

PHASE 1 CODE	Description
A1.1.1	Broadleaved woodland - semi-natural
A1.1.2	Broadleaved woodland - plantation
A1.2.1	Coniferous woodland - semi-natural
A1.2.2	Coniferous woodland - plantation
A1.3.1	Mixed woodland - semi-natural
A1.3.2	Mixed woodland - plantation
A2.1	Scrub - dense/continuous
A2.2	Scrub - scattered
A3.1	Parkland/scattered trees – broad-leaved
A3.2	Parkland/scattered trees - coniferous
A3.3	Parkland/scattered trees – mixed
A4.1	Broadleaved woodland – recently felled
A4.2	Coniferous woodland – recently felled
A4.3	Mixed woodland – recently felled
B1.1	Acid grassland – unimproved
B1.2	Acid grassland – semi-improved
B2.1	Neutral grassland – unimproved
B2.2	Neutral grassland - semi-improved
B3.1	Calcareous grassland – unimproved
B3.2	Calcareous grassland – semi-improved
B4	Improved grassland
B5	Marsh/marshy grassland
C1.1	Tall herb & fen – bracken continuous
C1.2	Tall herb & fen – bracken scattered
C3.1	Other tall herb and fern - ruderal
D1.1	Dry dwarf shrub heath - acid
G2	Running water
J1.1	Cultivated/disturbed land – arable
J1.2	Cultivated/disturbed land – amenity grassland
J1.3	Cultivated/disturbed land – ephemeral/short perennial
J1.4	Cultivated/disturbed land – introduced shrub
J2.1.1	Intact hedge – native species rich
J2.1.2	Intact hedge – species poor
J2.3.2	Hedge with trees – species-poor
J2.4	Fence
J2.5	Wall
J2.6	Dry ditch
J3.6	Built-up areas - buildings
J4	Bare ground

Extended Phase 1 Habitat Survey
Cairngorms Local Development Plan

Site: Newtonmore H2

March 2011

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CONTENTS

Summary

1. As part of the process of considering the suitability of Site Newtonmore H2, for inclusion into the Local Development Plan, the Cairngorms National Park Authority (CNPA) has commissioned Landcare NorthEast to undertake a desktop study and initial ecological survey.

2. A desktop study and subsequent ecological survey was conducted at Site Newtonmore H2 in March 2011.

3. The proposed development site is located at NN708987 and comprises approximately 5.2ha**.**

4. The main habitats are J1.1, recently reseeded grassland and A1.3.2, mixed plantation woodland.

5. No notable plant species (those of UK conservation concern - see UK list of Vascular Plants of Conservation Concern http://www.ukbap.org.uk - or those listed on the Cairngorms LBAP list of priority species) were noted.

6. The site has potential bat and badger foraging habitat.

1.0 Introduction

Background

1.1 In order to make an assessment on ecological impacts of developments of sites that have been presented for inclusion in the Cairngorms Local Development Plan, CNPA require desktop studies and ecological surveys of each site to be undertaken.

1.2 With regard to this, an extended Phase 1 survey and habitat suitability assessment was conducted at Site Newtonmore H2.

1.3 The site is located at NN708987 and comprises approximately 5.2ha.

1.4 The survey work was conducted by Steff Ferguson and Flora Grigor-Taylor, both experienced wildlife surveyors, chartered environmentalists and members of IEEM.

Existing Data

1.5 A review of the data held on the National Biodiversity Network (NBN) gateway was undertaken to identify species of conservation concern that have been recorded on the proposed development site.

1.6 NBN results

Occurring within the 10km square in which the site is located:
- Goldeneye
- Hen harrier
- Scottish crossbill (2km square record within 100m)
- Black grouse
- Capercaillie
- Redshank
- Northern brown argus
- Pearl bordered fritillary
- Aspen bracket fungus
- Aspen hoverfly
- Freshwater pearl mussel
- Blunt-leaved bristle moss
- Scottish wildcat
- Cousin German
- Netted mountain moth (1km record 200m SW & 200m E)
- Badger

At 2km square level:
- Twite
- Lapwing
- Pipistrelle bat spp.

At 1km square level:
Atlantic salmon
Red squirrel
Otter
Daubentons bat
Brown/long-eared bat spp.

Designated Sites

1.7 There are no statutory designations on the land surveyed.

2.0 Survey

Method

2.1 An ecological survey was undertaken on the site in March 2011.

2.2 A Phase 1 Habitat Mapping & Protected Species Survey, also referred to as an Extended Phase 1 Ecological Survey, was undertaken for the site. Standard Phase 1 methodology was used, including detailed target notes of notable plant species (those of conservation concern; also those listed on the Cairngorms LBAP list of priority species).

2.3 An assessment of the habitat suitability within the proposed development site for mammal species was also undertaken.

2.4 The standard optimal time to undertake an Extended Phase 1 Survey is between April and the end of September. The survey time of early March was therefore outwith the optimal time, and where potential for botanical interest was noted, further survey may be necessary to provide comprehensive information on a site.

2.5 The habitats are described by the use of target notes, annotated to the survey map (see Fig.1). Common species names and scientific names (Stace C (1997*) New Flora of the British Isles*. *Second Ed*. Cambridge University Press.) are given in the text below.

Results

Vegetation

2.6 This site comprises a large, level field of reseeded grassland, J1.1, with a shelterbelt of mixed woodland plantation woodland to the northeast.

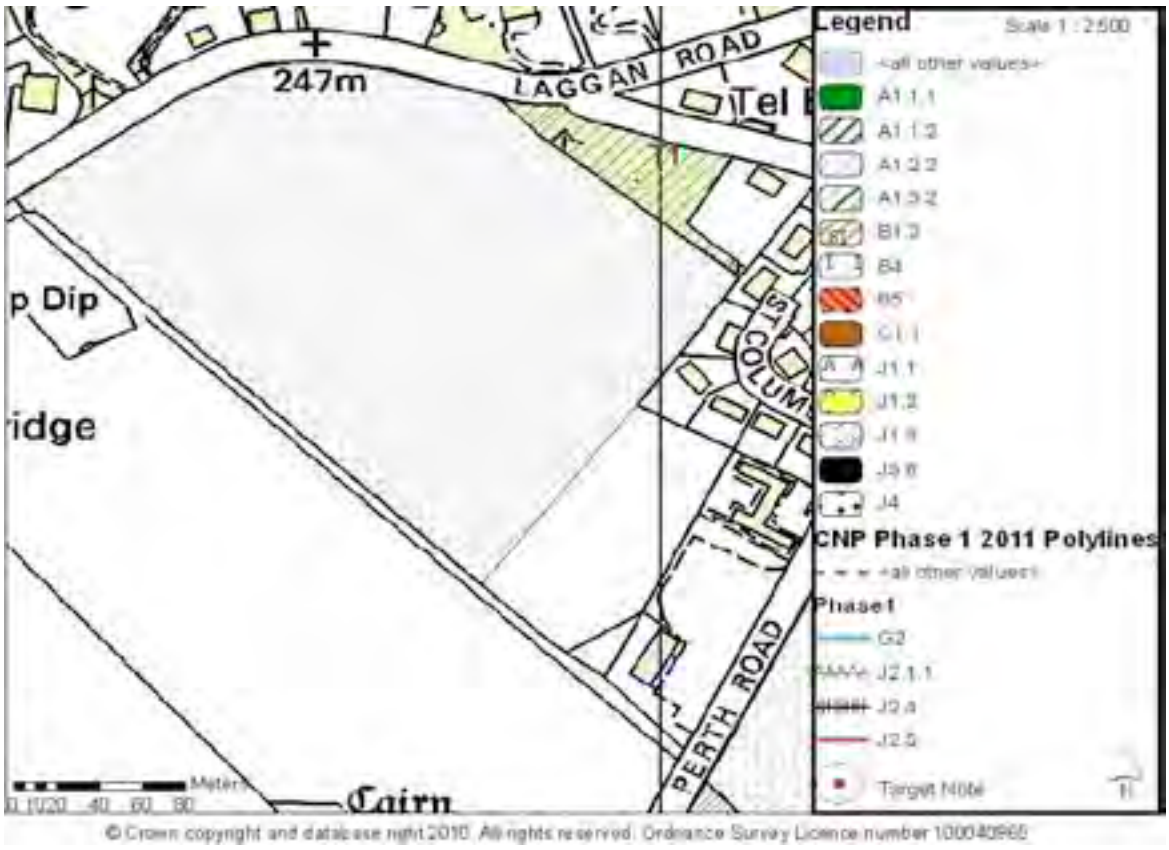
2.7 The shelterbelt is dominated by mature planted Scots pine (*Pinus sylvestris*), larch (*Larix* sp.) and Sitka spruce (*Picea sitchensis*). More recently planted additions include beech (*Fagus sylvatica*), birch (*Betula* spp.), common alder (*Alnus glutinosa*), oak (*Quercus* sp.) and Scots pine.

2.8 The shelterbelt offers value as a landscape feature, screening, wildlife corridor and habitat for a range of wildlife.

Fauna

2.9 No species of conservation concern and/or listed on the Cairngorms LBAP list of priority species were noted on site.

Fig 1 Survey Map



3.0 Assessment of Habitat Suitability for Mammals

3.1 The site itself offers no suitable breeding habitat for otter or water vole.

3.2 No badger setts were observed, however the site offers potential foraging opportunity for this species.

3.3 Red squirrel have been recorded in the immediate vicinity of this site (see NBN records). The shelterbelt with mature conifers offers potential foraging habitat for this species.

3.4 Several species of bat have been recorded in the area around this site. The woodland and woodland edge offers good foraging habitat for this group of species, while some of the mature trees may have bat roost potential.

4.0 References

JNCC. 1990. *Handbook for Phase 1 habitat survey − a technique for environmental audit.* 2007 edition. Nature Conservancy Council

Stace, C.A. 1997. *New Flora of the British Isles*. 2nd Edition. Cambridge University Press.

APPENDIX 1 – TARGET NOTES

T1 NJ 709987
Shelterbelt consisting of mixed plantation woodland.

The shelterbelt is dominated by mature planted Scots pine (*Pinus sylvestris*), larch (*Larix* sp.) and Sitka spruce (*Picea sitchensis*).

More recently planted additions (approximately 15 years old) include beech (*Fagus sylvatica*), birch (*Betula* spp.), common alder (*Alnus glutinosa*), oak (*Quercus* sp.) and Scots pine.

The shelterbelt offers value as a landscape feature, screening, wildlife corridor and habitat for a range of wildlife including red squirrel and bats.

APPENDIX 2 – SURVEY PHOTOGRAPHS

Newtonmore H2 – reseeded field

Shelterbelt – mature trees at the back, younger planting at front (T1)

APPENDIX 3 – PHASE 1 CODES

PHASE 1 CODE	Description
A1.1.1	Broadleaved woodland - semi-natural
A1.1.2	Broadleaved woodland - plantation
A1.2.1	Coniferous woodland - semi-natural
A1.2.2	Coniferous woodland - plantation
A1.3.1	Mixed woodland - semi-natural
A1.3.2	Mixed woodland - plantation
A2.1	Scrub - dense/continuous
A2.2	Scrub - scattered
A3.1	Parkland/scattered trees – broad-leaved
A3.2	Parkland/scattered trees - coniferous
A3.3	Parkland/scattered trees – mixed
A4.1	Broadleaved woodland – recently felled
A4.2	Coniferous woodland – recently felled
A4.3	Mixed woodland – recently felled
B1.1	Acid grassland – unimproved
B1.2	Acid grassland – semi-improved
B2.1	Neutral grassland – unimproved
B2.2	Neutral grassland - semi-improved
B3.1	Calcareous grassland – unimproved
B3.2	Calcareous grassland – semi-improved
B4	Improved grassland
B5	Marsh/marshy grassland
C1.1	Tall herb & fen – bracken continuous
C1.2	Tall herb & fen – bracken scattered
C3.1	Other tall herb and fern - ruderal
D1.1	Dry dwarf shrub heath - acid
G2	Running water
J1.1	Cultivated/disturbed land – arable
J1.2	Cultivated/disturbed land – amenity grassland
J1.3	Cultivated/disturbed land – ephemeral/short perennial
J1.4	Cultivated/disturbed land – introduced shrub
J2.1.1	Intact hedge – native species rich
J2.1.2	Intact hedge – species poor
J2.3.2	Hedge with trees – species-poor
J2.4	Fence
J2.5	Wall
J2.6	Dry ditch
J3.6	Built-up areas - buildings
J4	Bare ground

Extended Phase 1 Habitat Survey
Cairngorms Local Development Plan

Site: Killiecrankie Battlefield

March 2011

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CONTENTS

Summary

1. As part of the process of considering the suitability of Killiecrankie Battlefield Site for inclusion into the Local Development Plan, the Cairngorms National Park Authority (CNPA) has commissioned Landcare NorthEast to undertake a desktop study and initial ecological survey.

2. A desktop study and subsequent ecological survey was conducted at Killiecrankie Battlefield Site in March 2011.

3. The proposed development site is located at NN 911639 northwest of Killiecrankie village and comprises approximately 42.36ha.

4. The main habitats are B4 Improved Grassland, A1.1.1 Broadleaved Semi-natural Woodland and A1.2.2 Coniferous Plantation. Other notable habitats present include B5 Marsh/Marshy Grassland, B1.2 Semi-improved Acid Grassland and A1.1.2 Broadleaved Plantation.

5. No notable plant species (those of UK conservation concern - see UK list of Vascular Plants of Conservation Concern http://www.ukbap.org.uk - or those listed on the Cairngorms LBAP list of priority species) were noted.

6. The site offers potential for bat roosts as well as badger and red squirrel breeding habitat. Foraging opportunities are present for bat, badger, otter and red squirrel.

1.0 Introduction

Background

1.1 In order to make an assessment on ecological impacts of developments of sites that have been presented for inclusion in the Cairngorms Local Development Plan, CNPA require desktop studies and ecological surveys of each site to be undertaken.

1.2 With regard to this, an extended Phase 1 survey and habitat suitability assessment was conducted at Killiecrankie Battlefield Site.

1.3 The site is located at NN 911639 northwest of Killiecrankie village, and comprises approximately 42.36ha.

1.4 The survey work was conducted by Steff Ferguson and Flora Grigor-Taylor, both experienced wildlife surveyors, chartered environmentalists and members of IEEM.

Existing Data

1.5 A review of the data held on the National Biodiversity Network (NBN) gateway was undertaken to identify species of conservation concern that have been recorded on the proposed development site.

1.6 NBN results

Occurring within the 10km square in which the site is located:

Goldeneye
Twite
Hen harrier
Black grouse
Capercaillie
Redshank
Lapwing
Atlantic salmon
Mason bee
Daubenton's bat

At 2km square level:

Northern brown argus
Pearl bordered fritillary
Kentish glory
Otter
Natterer's bat

At 1km square level:

Red squirrel
Scottish wildcat
Badger
Pipistrelle spp.
Brown/long-eared bat

At 100m square level:

Cousin German

Designated Sites

1.7 The majority of mature broadleaved woodland is included on the Ancient Woodland Inventory, designated as either Long-established woodlands of semi-natural origin (2a) or Long-established woodlands of plantation origin (2b)

1.8 The Cairngorms Massif SPA forms part of the boundary along the north edge of the battlefield site. The SPA is notified for its aggregations of breeding birds, notably breeding Golden eagle (*Aquila chrysaetos*).

2.0 Survey

Method

2.1 An ecological survey was undertaken on the site in March 2011.

2.2 A Phase 1 Habitat Mapping & Protected Species Survey, also referred to as an Extended Phase 1 Ecological Survey, was undertaken for the site. Standard Phase 1 methodology was used, including detailed target notes of notable plant species (those of conservation concern; also those listed on the Cairngorms LBAP list of priority species).

2.3 An assessment of the habitat suitability within the proposed development site for mammal species was also undertaken.

2.4 The standard optimal time to undertake an Extended Phase 1 Survey is between April and the end of September. The survey time of early March was therefore outwith the optimal time, and where potential for botanical interest was noted, further survey may be necessary to provide comprehensive information on a site.

2.5 The habitats are described by the use of target notes, annotated to the survey map (see Fig.1). Common species names and scientific names (Stace C (1997*) New Flora of the British Isles*. *Second Ed*. Cambridge University Press.) are given in the text below.

Results

2.6 The site comprises steeply sloping, generally south-west facing ground with an altitude range of 200-330m. It stretches from Orchilmore in the east to Mains of Orchil in the west and incorporates a network of drystane dykes (J2.5) and fences (J2.4 deer and stock) dividing woodland from grazing pastures. Minor ditches and streams feature along woodland edges and through open fields (G2).

Vegetation

2.7 This site incorporates a variety of improved and semi-improved habitats, demonstrating historical and current land management methods implemented for agriculture, forestry and sporting interests.

2.8 The main habitats are Broadleaved Semi-natural & Plantation Woodlands, Coniferous Plantation and Improved Grassland. Other notable habitats present include Marsh/Marshy Grassland, Semi-improved Acid Grassland and Broadleaved Plantations.

A1.1.1 Broadleaved Semi-natural Woodland
This habitat varies in structure, species composition and age across the site, as a result of variation in woodland origin, establishment and more recent forest management.
Dominant canopy species is birch (*Betula pendula* and *B. pubescens*) with occasional mature Scots Pine (*Pinus sylvestris*). The structure is open in places with rocky outcrops. Grazing is evident in some sections with no natural regeneration occurring, although deer fenced sections have evidence of birch regeneration.

Species present in the woodland ground layer include creeping buttercup (*Ranunculus repens*), common dog-violet (*Viola riviniana*), ribwort plantain (*Plantago lanceolata*), tormentil (*Potentilla erec*ta), Germander speedwell (*Veronica chamaedrys*), common mousear (*Cerastium fontanum*), heath milkwort (*Polygala serpyllifolia*), heath bedstraw (*Gallium saxatile*), occasional ling heather (*Calluna vulgaris*), fine grasses and sedges.
Stands of bracken (*Pteridium aquilinum)* occur below the birch canopy.
Other sections have been under-planted (approx.10 years ago) with oak (*Quercus* sp), Scots pine, ash (*Fraxinus excelsior*), Alder (*Alnus glutinosa*), willow (*Salix* spp). Here the dominant canopy species (*Betula* spp) is mixed with other mature broadleaves – alder, Scots pine, oak and ash.

All the woodlands in this habitat category feature on the Ancient Woodland Inventory, as either 2a or 2b (definitions below).

Long-established woodlands of semi-natural origin (2a)
Sites shown as semi-natural woodland in c.1860 (i.e. those on the OS First Edition maps) but not shown as woodland on the 1750 maps. These are woodlands that have apparently arisen between 1750 and 1860.

Long-established woodlands of plantation origin (2b)
Sites shown as plantation woodland in c.1860 but not shown as woodland at all in 1750 or shown as plantation on these maps. These are woods that were apparently planted before 1860.

A single stand of wet woodland is present in association with a wet flush, north of Mains of Orchil. Dominant species are birch and alder.

A1.2.2 Coniferous Plantation Woodland
Four distinct sections within the survey area support this habitat. The blocks vary in age, structure and composition.
Main species are European larch (*Larix decidua*), Scots Pine and Sitka spruce (*Picea sitchensis*). Some feature broadleaves (rowan *Sorbus aucuparia*, birch *Betula* spp) established along the woodland edge and house pheasant rearing pens and feed hoppers.

B4 Improved Grassland
The majority of open ground supports improved pasture, affected by livestock grazing, drainage and probable re-seeding and lime/fertiliser applications. A limited range of grasses and a few common forbs are found. Stands of creeping thistle (*Cirsium arvense*) indicate local enrichment of the soil be grazing animals.
Currently, the pastures are grazed by sheep and Highland cattle.

B5 Marsh/Marshy Grassland
Patches of marshy grassland/rush pasture associated with wet flushes occur on the improved grassland. These patches are dominated by jointed rush (*Juncus articulatus*) and tufted hair-grass (*Deschampsia cespitosa*).

B1.2 Semi-improved Acid Grassland

This area of hill-grazing land supports a transition from improved grassland to a sward with a more diverse range of species. This is indicative of a less intensive grazing regime and fewer artificial modifications. At the hill summit, rocky outcrops and *Calluna* hummocks feature.

The sward includes heath bedstraw (*Gallium saxatile*), ling heather (*Calluna vulgaris)*, ribwort plantain (*Plantago lanceolata*), tormentil (*Potentilla ere*cta), Devil's-bit scabious (*Succisa pratensis*), Germander speedwell (*Veronica chamaedrys*), heath wood rush (*Luzula multiflora*), creeping buttercup (*Ranunculus repens*), white clover (Trifolium repens), dandelion (*Taraxacum officinale*), fine grasses and sedges.

The habitat grades with altitude into dwarf shrub heath and bog myrtle (*Myrica gale*) lawns immediately to the north.

A1.1.2 Broadleaved Plantation.

The plantation east of Lettoch comprises mature birch, with some conifers (approx. 10%) and rowan along the woodland edge. A small stand of creeping willow (*Salix repens*) has become established at the southern end.

Other habitats present over small areas: C1.1 Continuous bracken, J4 Hardstanding

Fauna

2.9 No species of conservation concern and/or listed on the Cairngorms LBAP list of priority species were noted on site.

2.10 Stripped Sitka spruce cones were recorded on the forest floor of a conifer plantation (see Target Note 12), suggesting squirrel foraging.

Fig 1 Survey Map – whole site

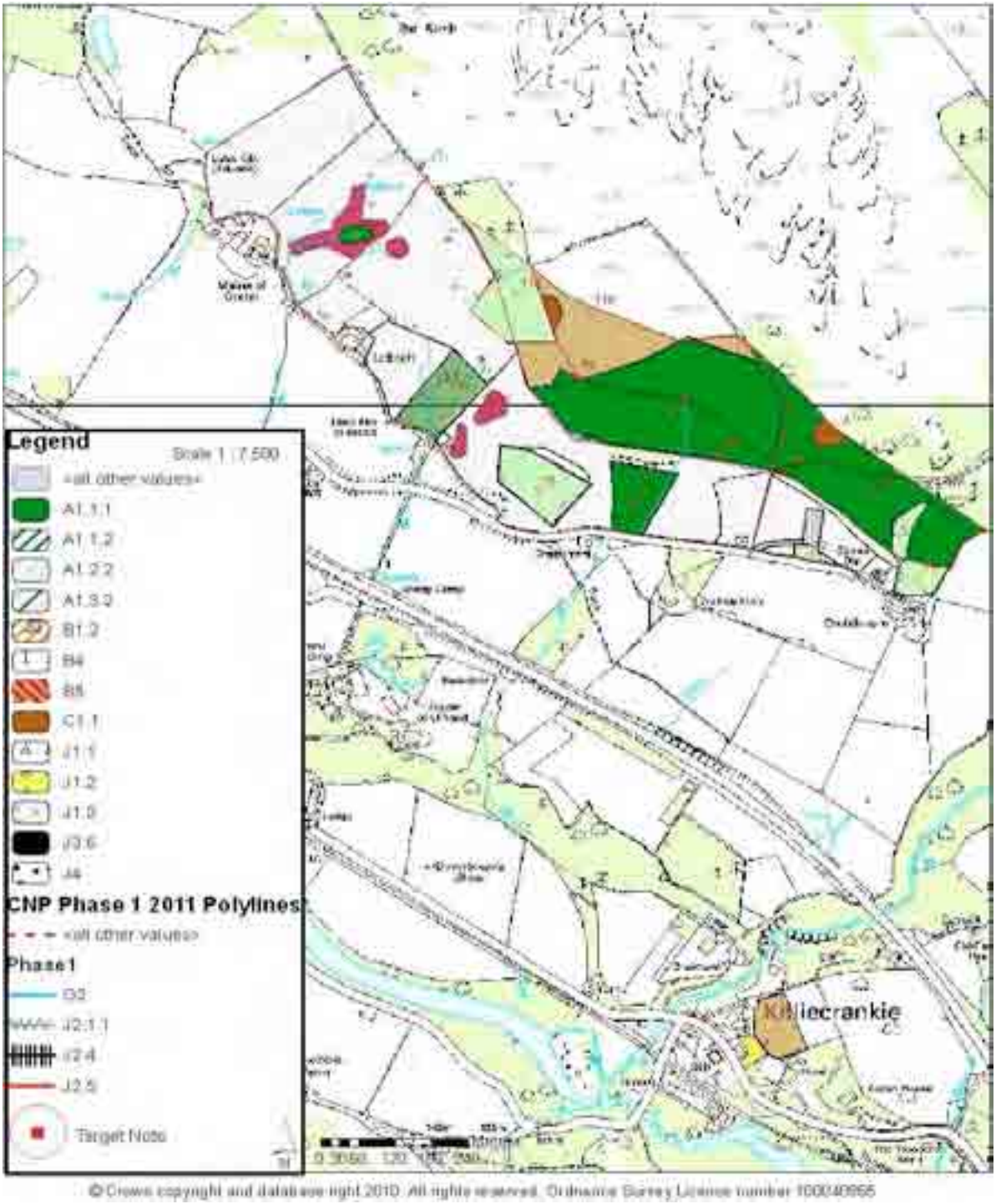


Fig 2 Survey Map – eastern section

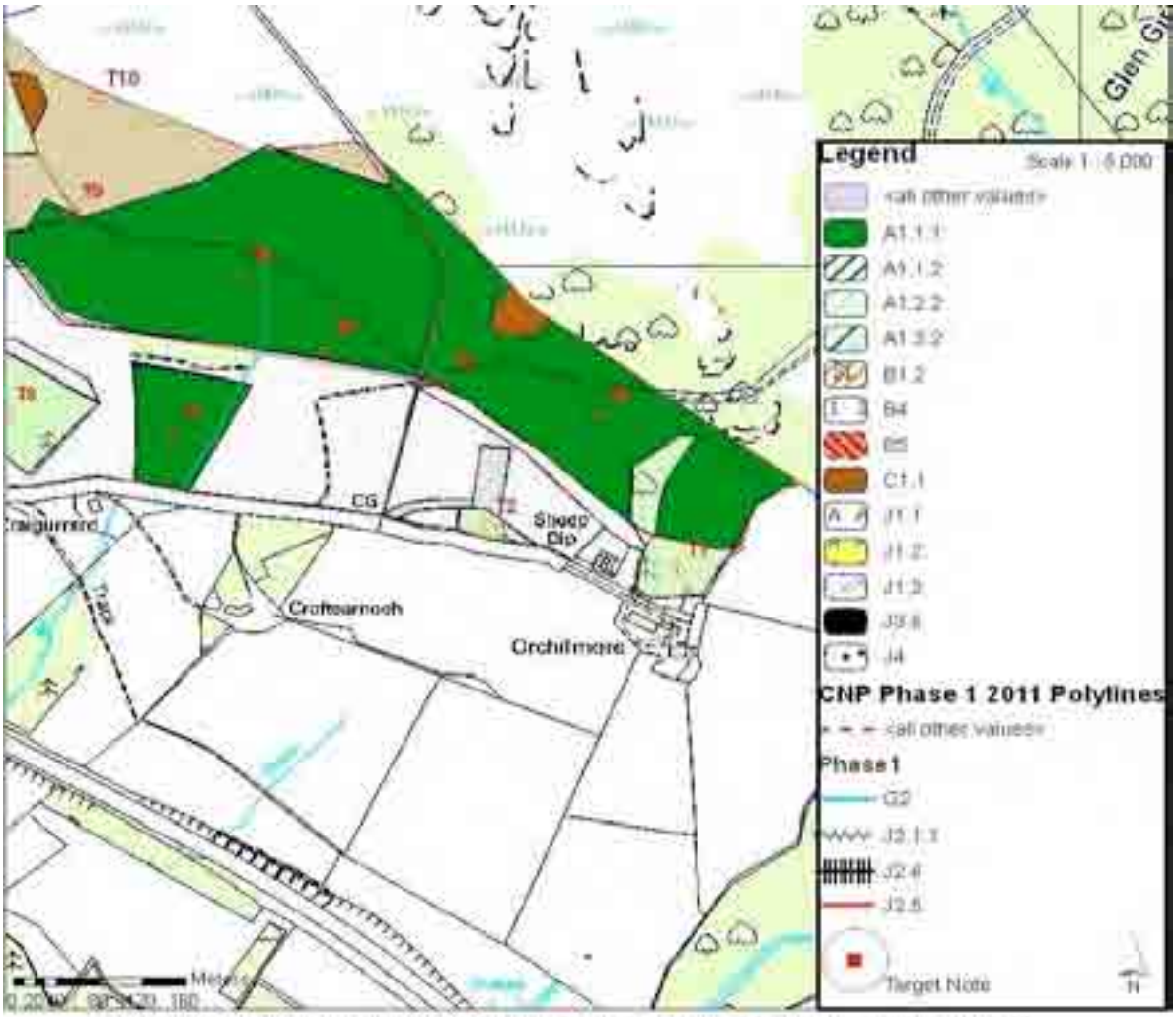
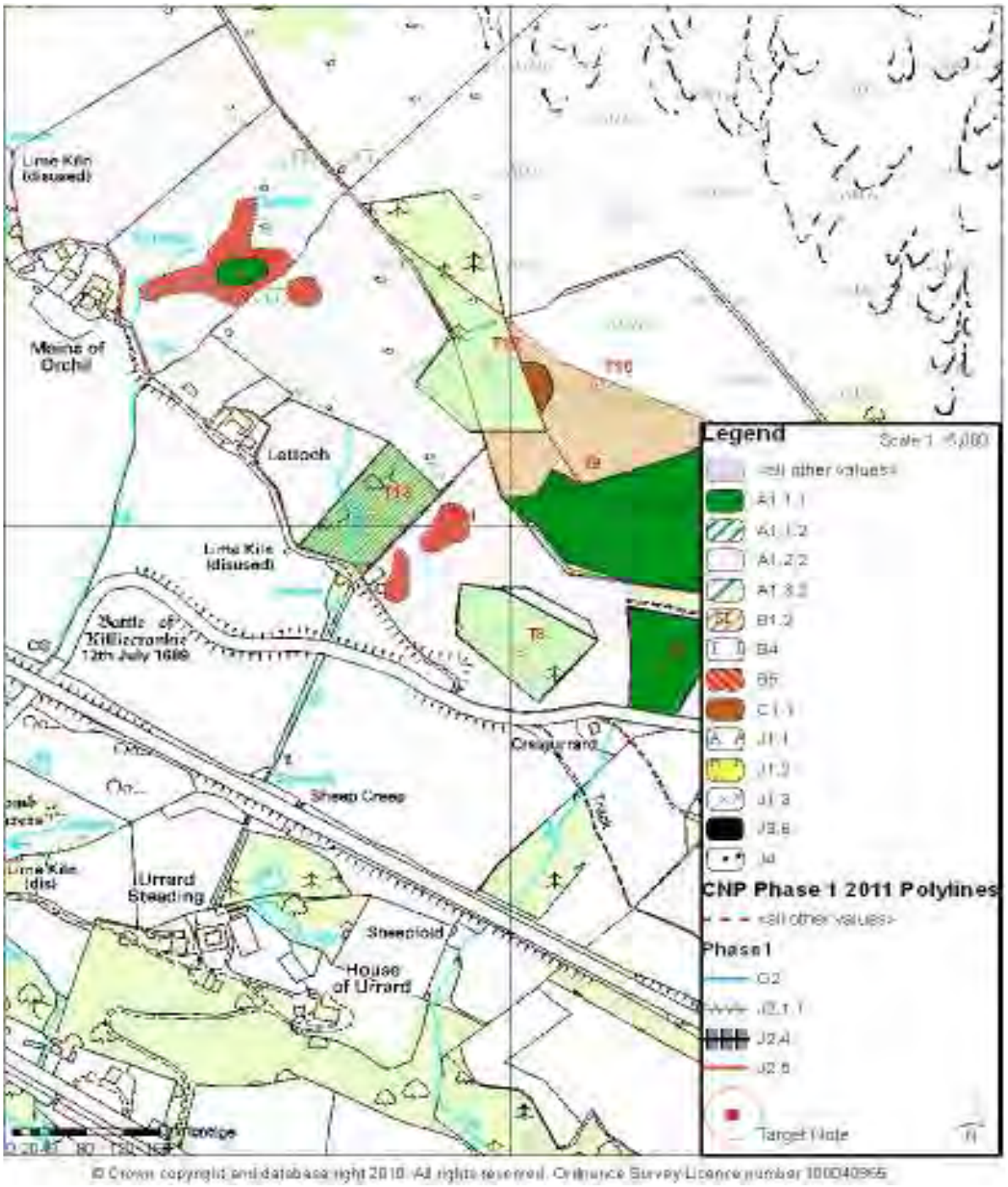


Fig 3 Survey Map – western section



3.0 Assessment of Habitat Suitability for Mammals

3.1 No badger setts, red squirrel dreys, otter holts or bat roosts were observed. However, the site does offer suitable breeding and foraging habitat for a number of protected species.

3.2 Mature woodlands contain numerous trees which offer potential roosting sites for bats. Open woodlands, grassland, woodland edges and linear features such as dykes offer excellent bat foraging opportunities. NBN records show that at least 4 species of bats have been recorded in the area, with Pipistrelle species and long eared bats within the same 1km square, Natterer's bat within the same 2km square.

3.3 Woodland blocks where the structure provides suitably dense cover may provide opportunities for badger breeding habitat, with the majority of the site offering foraging habitat for this species.

3.4 Suitable trees for red squirrel dreys are present within existing woodlands. NBN data shows red squirrel to have been recorded in the immediate vicinity (within same 1km square), and the results of this survey suggest presence within at least one of the conifer plantations (see Target Note 12).

3.5 Minor watercourses may present corridors for otter movement between foraging habitats.

3.6 Scottish wildcat records exist within the same 1 km square (from NBN data). Originally a forest creature, the species has evolved to utilise everything available to it. Individuals typically utilise a mixture of habitats in their territory, including farmland, natural meadow, forestry, mountain foothills and heather moor. These habitats occur within or adjacent to the survey area.

4.0 References

JNCC. 1990. *Handbook for Phase 1 habitat survey − a technique for environmental audit.* 2007 edition. Nature Conservancy Council

Stace, C.A. 1997. *New Flora of the British Isles*. 2nd Edition. Cambridge University Press.

APPENDIX 1 – TARGET NOTES

T1 - **NN 916 637**
Conifer plantation woodland north of Orchilmore farm buildings; dominant species European larch (*Larix decidua*), Scots pine (*Pinus sylvestris*) and Sitka spruce (*Picea sitchensis*).

T2 - **NN 914 637**
Conifer plantation woodland located south of recently constructed hardstanding area; comprises mature Scots pine (*Pinus sylvestris*) and Leyland Cypress × *(Cupressocyparis* leylandii) on south edge of woodland, along side of farm track.

T3 - **NN 915 638**
Section of mature birch woodland, with canopy varying in structure and composition. Canopy comprises *Betula pendula* and *B. pubescens* and is open in places, with occasional Scots pine (*Pinus sylvestris*).

Ground layer is grazed with no natural regeneration of trees evident. Ground flora includes creeping buttercup (*Ranunculus repens*), common dog-violet (*Viola riviniana*), ribwort plantain (*Plantago lanceolata*), tormentil (*Potentilla erec*ta), germander speedwell (*Veronica chamaedrys*), common mousear (*Cerastium fontanum*), heath milkwort (*Polygala serpyllifolia*), heath bedstraw (*Gallium saxatile*), occasional ling heather (*Calluna vulgaris*), fine grasses and sedges. Stands of bracken (*Pteridium aquilinum)* occur below the birch canopy.

This area is listed in the Ancient Woodland Inventory as 2b Long-established woodlands of plantation origin.

T4 - **NN 914 638**
Stand of mature oaks, possibly ancient/veteran tree specimens.

T5 - **NN 912 639**
Single ancient Scots pine, potentially of biological, aesthetic and cultural significance.

T6 - **NN 912 639**
Section of mature mixed broadleaved woodland. Dominant canopy species are birch (*Betula pendula* and *B. pubescens*), Scots pine, alder, oak and ash. Under-planted (approx.10 years ago) with oak (*Quercus* sp), Scots pine, ash (*Fraxinus excelsior*), Alder (*Alnus glutinosa*), willow (*Salix* spp). Perimeter deer fencing is allowing regeneration to take place.

This area is included on Ancient Woodland Inventory as 2a Long-established woodlands of semi-natural origin.

T7 - **NN 911 638**
Semi-natural mature birch stand, included on Ancient Woodland Inventory as 2a Long-established woodlands of semi-natural origin.

T8 - **NN 910 638**
Conifer Plantation with species established in blocks – mature Scots pine and European larch with younger sections of Scots pine, Sitka spruce and approximately 10% birch.

T9 **NN 910 640**
Route of a historical thoroughfare, with ancient vegetation-covered wall alongside.

T10 - **NN 911 641**
Hill summit featuring rocky outcrops, *Calluna* hummocks and bracken patches where ground slopes steeply south west.

T11 - **NN 909 640**
Mosaics of wet grassland & flush dominated by jointed rush (*Juncus articulatus)* and tufted hair-grass (*Deschampsia cespitosa)*.

T12 - **NN 909 641**
Plantation woodland (approx 30 years old) with conifer species established in distinct blocks of Scots pine, Sitka spruce & European larch. Pheasant rearing pens and feed hoppers present. Stripped Sitka spruce cones were recorded on the forest floor, suggesting squirrel foraging

T13 - **NN 908 640**
Broadleaved plantation east of Lettoch, featuring mature birch with younger conifers and rowan along woodland edge. A small stand of creeping willow (*Salix repens*) has become established at the southern end.

T14 - **NN 907 643**
One stand of wet woodland present in association with a wet flush, north of Mains of Orchil. Dominant species are birch and alder, with *Juncus* dominated understorey

APPENDIX 2 – SURVEY PHOTOGRAPHS

Target note 3: mature birch woodland, with open canopy – A1.1.1 Broadleaved Semi-natural Woodland

Target note 5: Single ancient Scots Pine

Target note 6: mature mixed woodland - A1.1.1 Broadleaved Semi-natural Woodland, with underplanting and improved grassland in the foreground

Target note 7: Mature birch stand - A1.1.1 Broadleaved Semi-natural Woodland

Target note 9: route of a historical thoroughfare, with ancient vegetation-covered walls alongside

Majority of the site is characterised by an improved grass sward B4 Improved Grassland, divided by a system of fences and drystane dykes

Target note 12: Stripped Sitka spruce cones noted on the forest floor of conifer plantation, suggesting squirrel foraging.

Target note 14: single stand of alder wet woodland surrounded by Juncus-dominated B5 Marshy Grassland

APPENDIX 3 – PHASE 1 CODES

PHASE 1 CODE	Description
A1.1.1	Broadleaved woodland - semi-natural
A1.1.2	Broadleaved woodland - plantation
A1.2.1	Coniferous woodland - semi-natural
A1.2.2	Coniferous woodland - plantation
A1.3.1	Mixed woodland - semi-natural
A1.3.2	Mixed woodland - plantation
A2.1	Scrub - dense/continuous
A2.2	Scrub - scattered
A3.1	Parkland/scattered trees – broad-leaved
A3.2	Parkland/scattered trees - coniferous
A3.3	Parkland/scattered trees – mixed
A4.1	Broadleaved woodland – recently felled
A4.2	Coniferous woodland – recently felled
A4.3	Mixed woodland – recently felled
B1.1	Acid grassland – unimproved
B1.2	Acid grassland – semi-improved
B2.1	Neutral grassland – unimproved
B2.2	Neutral grassland - semi-improved
B3.1	Calcareous grassland – unimproved
B3.2	Calcareous grassland – semi-improved
B4	Improved grassland
B5	Marsh/marshy grassland
C1.1	Tall herb & fen – bracken continuous
C1.2	Tall herb & fen – bracken scattered
C3.1	Other tall herb and fern - ruderal
D1.1	Dry dwarf shrub heath - acid
G2	Running water
J1.1	Cultivated/disturbed land – arable
J1.2	Cultivated/disturbed land – amenity grassland
J1.3	Cultivated/disturbed land – ephemeral/short perennial
J1.4	Cultivated/disturbed land – introduced shrub
J2.1.1	Intact hedge – native species rich
J2.1.2	Intact hedge – species poor
J2.3.2	Hedge with trees – species-poor
J2.4	Fence
J2.5	Wall
J2.6	Dry ditch
J3.6	Built-up areas - buildings
J4	Bare ground

Extended Phase 1 Habitat Survey
Cairngorms Local Development Plan

Site: Dalwhinnie H1

March 2011

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CONTENTS

Summary

1. As part of the process of considering the suitability of Site Dalwhinnie H1, for inclusion into the Local Development Plan, the Cairngorms National Park Authority (CNPA) has commissioned Landcare NorthEast to undertake a desktop study and initial ecological survey.

2. A desktop study and subsequent ecological survey was conducted at Site Dalwhinnie H1, in March 2011.

3. The proposed development site is located at NN 637850 along the A889 through Dalwhinnie and comprises approximately 0.52ha.

4. The main habitat is B5 Marsh/Marshy grassland, part of a botanically diverse wetland of significant ecological interest.

5. No notable plant species (those of UK conservation concern - see UK list of Vascular Plants of Conservation Concern http://www.ukbap.org.uk - or those listed on the Cairngorms LBAP list of priority species) were noted.

6. The site may provide bat and badger foraging habitat.

1.0 Introduction

Background

1.1 In order to make an assessment on ecological impacts of developments of sites that have been presented for inclusion in the Cairngorms Local Development Plan, CNPA require desktop studies and ecological surveys of each site to be undertaken.

1.2 With regard to this, an extended Phase 1 survey and habitat suitability assessment was conducted at Site Dalwhinnie H1.

1.3 The site is located at NN 637850 along the A889 through Dalwhinnie and comprises approximately 0.52ha.

1.4 The survey work was conducted by Steff Ferguson and Flora Grigor-Taylor, both experienced wildlife surveyors, chartered environmentalists and members of IEEM.

Existing Data

1.5 A review of the data held on the National Biodiversity Network (NBN) gateway was undertaken to identify species of conservation concern that have been recorded on the proposed development site.

1.6 NBN results

Occurring within the 10km square in which the site is located:
Goldeneye
Hen harrier
Black grouse
Atlantic salmon (100m record 150m south)
Woolly willow
Scottish wildcat
Cousin German (1km record 250m north)
otter
badger

At 2km square level:
Twite
Redshank
Lapwing

At 1km square level:
Daubentons bat

Designated Sites

1.7 There are no statutorily designations on, or sharing a boundary with, the land surveyed.

2.0 Survey

Method

2.1 An ecological survey was undertaken on the site in March 2011.

2.2 A Phase 1 Habitat Mapping & Protected Species Survey, also referred to as an Extended Phase 1 Ecological Survey, was undertaken for the site. Standard Phase 1 methodology was used, including detailed target notes of notable plant species (those of conservation concern; also those listed on the Cairngorms LBAP list of priority species).

2.3 An assessment of the habitat suitability within the proposed development site for mammal species was also undertaken.

2.4 The standard optimal time to undertake an Extended Phase 1 Survey is between April and the end of September. The survey time of early March was therefore outwith the optimal time, and where potential for botanical interest was noted, further survey may be necessary to provide comprehensive information on a site.

2.5 The habitats are described by the use of target notes, annotated to the survey map (see Fig.1). Common species names and scientific names (Stace C (1997*) New Flora of the British Isles*. *Second Ed*. Cambridge University Press.) are given in the text below.

Results

Vegetation

2.6 This site is on semi-improved flat ground located immediately east of the A889. Fenced and managed as rough grazing, historical drainage has modified water levels and therefore altered species composition. Ditches form the site boundary on 2 sides and a third smaller channel traverses the site.

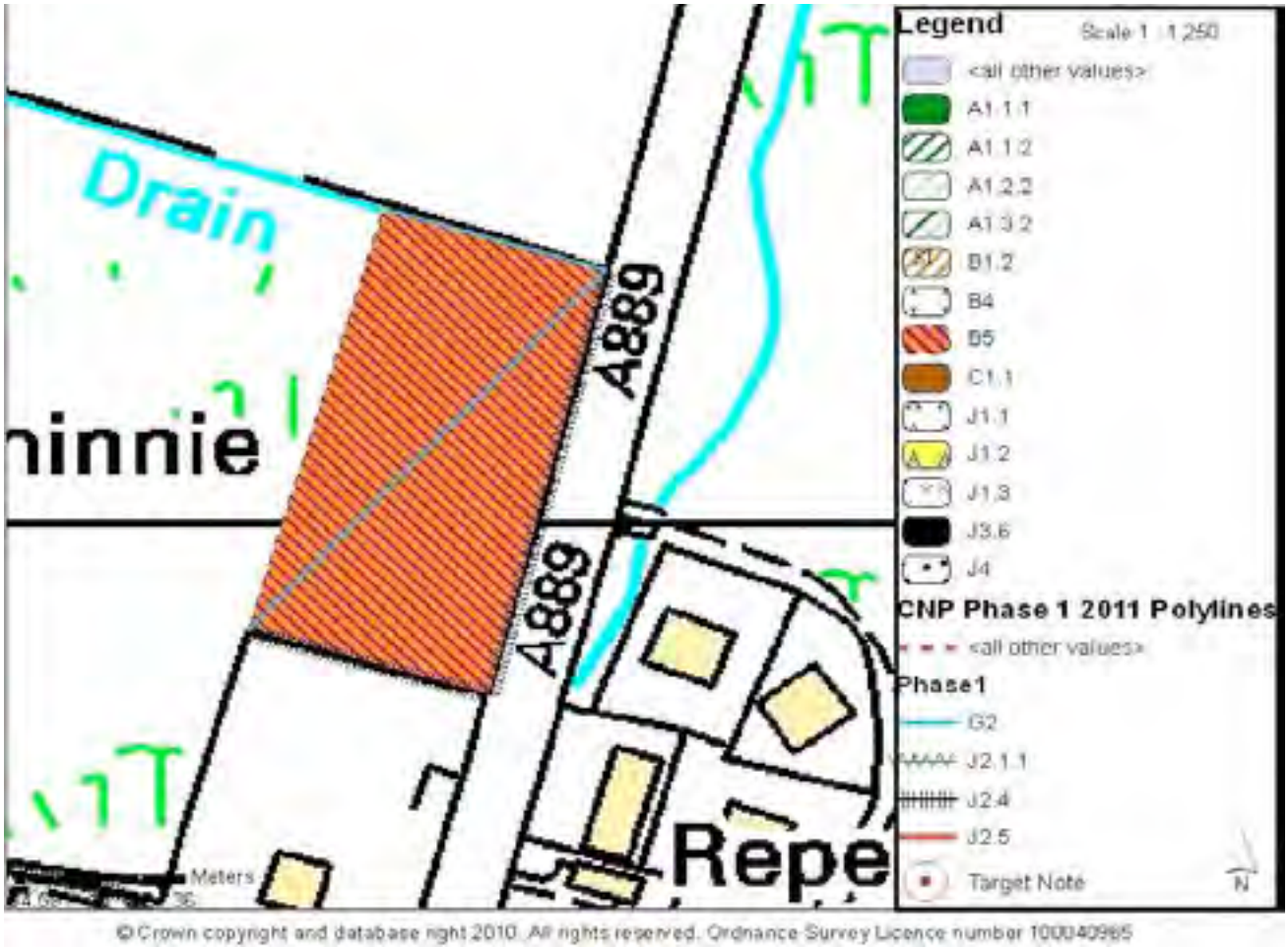
<u>B5 Marsh/Marshy Grassland</u>
As the site was assessed early in the year and therefore outwith the ideal survey season, a complete species list could not be collated. Indications are that the wetland is botanically diverse and of significant ecological interest.
Plants noted include Hare's-tail cottongrass (*Eriophorum vaginatum*), matgrass (*Nardus stricta*), cross-leaved heath (*Erica tetralix*), heath wood rush (*Luzula multiflora*), soft rush (*Juncus effusus*), *Carex* and *Sphagnum* spp
Moisture levels vary underfoot, giving a mosaic of sub-habitats varying in saturation.

Fauna

2.7 Three pairs of lapwing and a single snipe were recorded displaying breeding behaviour on ground immediately adjacent to the site. No other species of conservation concern and/or listed on the Cairngorms LBAP list of priority species were noted.

2.8 Wading birds such as lapwing, snipe and redshank require wet ground in order to provide invertebrates to feed chicks. Current ground conditions are clearly suitable for breeding waders but further drainage may affect water levels, degrade the site and render it unsuitable for breeding birds. Thus, development has the potential to impact negatively on local biodiversity, and wader populations in particular.

Fig 1 Survey Map



3.0 Assessment of Habitat Suitability for Mammals

3.1 The site itself offers no suitable breeding habitat for otter, water vole, badger, bat or red squirrel. There may be foraging opportunity for badger and bats here and ditches may present corridors for otter movement between foraging habitats.

4.0 References

JNCC. 1990. *Handbook for Phase 1 habitat survey − a technique for environmental audit.* 2007 edition. Nature Conservancy Council

Stace, C.A. 1997. *New Flora of the British Isles*. 2nd Edition. Cambridge University Press.

APPENDIX 1 – TARGET NOTES

T1 - NN 637850
B5 Marsh/Marshy Grassland
The wetland is botanically diverse and of significant ecological interest. Plants noted include Hare's-tail Cottongrass (*Eriophorum vaginatum*), matgrass (*Nardus stricta*), cross-leaved heath (*Erica tetralix*), heath woodrush (*Luzula multiflora*), soft rush (*Juncus effusus*), *Carex* and *Sphagnum* spp
Moisture levels vary underfoot, giving a mosaic of sub-habitats varying in wetness

APPENDIX 2 – SURVEY PHOTOGRAPHS

Above, proposed site in background with wet ground conditions & tussocky vegetation
Below, shows site itself supporting B5 Marsh/Marshy Grassland with a more tightly grazed diverse sward and drainage channels

APPENDIX 3 – PHASE 1 CODES

PHASE 1 CODE	Description
A1.1.1	Broadleaved woodland - semi-natural
A1.1.2	Broadleaved woodland - plantation
A1.2.1	Coniferous woodland - semi-natural
A1.2.2	Coniferous woodland - plantation
A1.3.1	Mixed woodland - semi-natural
A1.3.2	Mixed woodland - plantation
A2.1	Scrub - dense/continuous
A2.2	Scrub - scattered
A3.1	Parkland/scattered trees – broad-leaved
A3.2	Parkland/scattered trees - coniferous
A3.3	Parkland/scattered trees – mixed
A4.1	Broadleaved woodland – recently felled
A4.2	Coniferous woodland – recently felled
A4.3	Mixed woodland – recently felled
B1.1	Acid grassland – unimproved
B1.2	Acid grassland – semi-improved
B2.1	Neutral grassland – unimproved
B2.2	Neutral grassland - semi-improved
B3.1	Calcareous grassland – unimproved
B3.2	Calcareous grassland – semi-improved
B4	Improved grassland
B5	Marsh/marshy grassland
C1.1	Tall herb & fen – bracken continuous
C1.2	Tall herb & fen – bracken scattered
C3.1	Other tall herb and fern - ruderal
D1.1	Dry dwarf shrub heath - acid
G2	Running water
J1.1	Cultivated/disturbed land – arable
J1.2	Cultivated/disturbed land – amenity grassland
J1.3	Cultivated/disturbed land – ephemeral/short perennial
J1.4	Cultivated/disturbed land – introduced shrub
J2.1.1	Intact hedge – native species rich
J2.1.2	Intact hedge – species poor
J2.3.2	Hedge with trees – species-poor
J2.4	Fence
J2.5	Wall
J2.6	Dry ditch
J3.6	Built-up areas - buildings
J4	Bare ground

Extended Phase 1 Habitat Survey
Cairngorms Local Development Plan

Site: Dalwhinnie H2

March 2011

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CONTENTS

Summary

1. As part of the process of considering the suitability of Site Dalwhinnie H2, for inclusion into the Local Development Plan, the Cairngorms National Park Authority (CNPA) has commissioned Landcare NorthEast to undertake a desktop study and initial ecological survey.

2. A desktop study and subsequent ecological survey was conducted at Site Dalwhinnie H2 in March 2011.

3. The proposed development site is located at NN 636 848 on Ben Alder Road, Dalwhinnie, and comprises approximately 0.49ha.

4. The main habitat is J1.3 Ephemeral/short perennial patchy plant associations with mounds of rubble from demolished buildings.

5. No notable plant species (those of UK conservation concern - see UK list of Vascular Plants of Conservation Concern http://www.ukbap.org.uk - or those listed on the Cairngorms LBAP list of priority species) were noted.

6. The site may provide bat and badger foraging habitat.

1.0 Introduction

Background

1.1 In order to make an assessment on ecological impacts of developments of sites that have been presented for inclusion in the Cairngorms Local Development Plan, CNPA require desktop studies and ecological surveys of each site to be undertaken.

1.2 With regard to this, an extended Phase 1 survey and habitat suitability assessment was conducted at Site Dalwhinnie H2.

1.3 The site is located at NN 636 848 on Ben Alder Road, Dalwhinnie and comprises approximately 0.49ha.

1.4 The survey work was conducted by Steff Ferguson and Flora Grigor-Taylor, both experienced wildlife surveyors, chartered environmentalists and members of IEEM.

Existing Data

1.5 A review of the data held on the National Biodiversity Network (NBN) gateway was undertaken to identify species of conservation concern that have been recorded on the proposed development site.

1.6 NBN results

Occurring within the 10km square in which the site is located:
Goldeneye
Hen harrier
Black grouse
Atlantic salmon (100m record 150m south)
Woolly willow
Scottish wildcat
Cousin German (1km record 250m north)
Otter
Badger

At 2km square level:
Twite
Redshank
Lapwing

At 1km square level:
Daubentons bat

Designated Sites

1.7 There are no statutorily designations on, or sharing a boundary with, the land surveyed.

2.0 Survey

Method

2.1 An ecological survey was undertaken on the site in March 2011.

2.2 A Phase 1 Habitat Mapping & Protected Species Survey, also referred to as an Extended Phase 1 Ecological Survey, was undertaken for the site. Standard Phase 1 methodology was used, including detailed target notes of notable plant species (those of conservation concern; also those listed on the Cairngorms LBAP list of priority species).

2.3 An assessment of the habitat suitability within the proposed development site for mammal species was also undertaken.

2.4 The standard optimal time to undertake an Extended Phase 1 Survey is between April and the end of September. The survey time of early March was therefore outwith the optimal time, and where potential for botanical interest was noted, further survey may be necessary to provide comprehensive information on a site.

2.5 The habitats are described by the use of target notes, annotated to the survey map (see Fig.1). Common species names and scientific names (Stace C (1997*) New Flora of the British Isles*. *Second Ed*. Cambridge University Press.) are given in the text below.

Results

2.6 This brown field site is on flat ground located in the centre of the settlement of Dalwhinnie. The site's boundary is marked with stock, deer and wooden fencing. The site can be divided into 2 distinct sections, separated by a wooden fence: the western part comprises some rough grassland with a few trees, and large mounds of dumped rubble and burnt litter. The eastern end comprises a building, currently unused, which was the premises of a former takeaway/café and associated carparking.

Vegetation

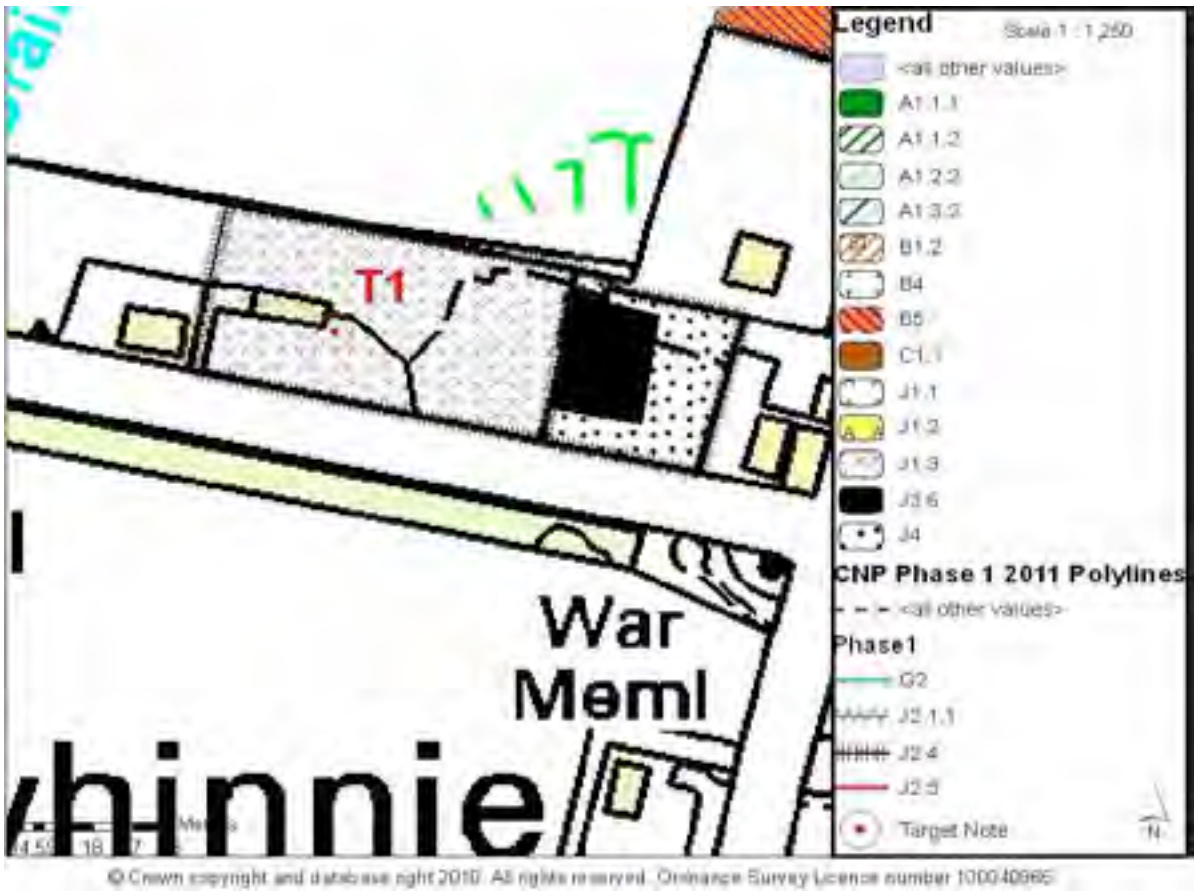
2.7 The western section is a derelict site, characterised by mounds of rubble and remnant foundations from demolished buildings and disturbed ground now vegetated over by short patchy plant associations and shrubs. Some mature trees feature along the site boundary: Sitka spruce (*Picea sitchensis*), birch (*Betula* sp), lime (*Tilia x europaea*) and ornamental spruce. A patch of rowan (*Sorbus aucuparia*) and bridewort (*Spiraea* Agg.) is located near the centre.

2.8 The eastern section has no botanical interest. Habitats present are J4 Bare Ground and J3.6 Built-up area

Fauna

2.9 No species of conservation concern and/or listed on the Cairngorms LBAP list of priority species were noted on site.

Fig 1 Survey Map



3.0 Assessment of Habitat Suitability for Mammals

3.1 The site itself offers no suitable breeding habitat for otter, water vole, badger or red squirrel. There may be foraging opportunity for badger and bats here.

3.2 Existing buildings and mature trees may offer bat roosting habitat.

4.0 References

JNCC. 1990. *Handbook for Phase 1 habitat survey − a technique for environmental audit.* 2007 edition. Nature Conservancy Council

Stace, C.A. 1997. *New Flora of the British Isles*. 2nd Edition. Cambridge University Press.

APPENDIX 1 – TARGET NOTES

T1 - **NN 636 848**

Derelict site, characterised by mounds of rubble and remnant foundations from demolished buildings and disturbed ground now vegetated over by short patchy plant associations and shrubs. Some mature trees feature along the site boundary: Sitka spruce (*Picea sitchensis*), birch (*Betula* sp), lime (*Tilia x europaea*) and ornamental spruce. A patch of rowan (*Sorbus aucuparia*) and bridewort (*Spiraea* Agg.) is located near the centre.

APPENDIX 2 – SURVEY PHOTOGRAPHS

Western section of site, with rubble piles and patches of shrub vegetation visible

Western section of site, looking east

Looking towards eastern section & existing disused café; remnant foundations in foreground

APPENDIX 3 – PHASE 1 CODES

PHASE 1 CODE	Description
A1.1.1	Broadleaved woodland - semi-natural
A1.1.2	Broadleaved woodland - plantation
A1.2.1	Coniferous woodland - semi-natural
A1.2.2	Coniferous woodland - plantation
A1.3.1	Mixed woodland - semi-natural
A1.3.2	Mixed woodland - plantation
A2.1	Scrub - dense/continuous
A2.2	Scrub - scattered
A3.1	Parkland/scattered trees – broad-leaved
A3.2	Parkland/scattered trees - coniferous
A3.3	Parkland/scattered trees – mixed
A4.1	Broadleaved woodland – recently felled
A4.2	Coniferous woodland – recently felled
A4.3	Mixed woodland – recently felled
B1.1	Acid grassland – unimproved
B1.2	Acid grassland – semi-improved
B2.1	Neutral grassland – unimproved
B2.2	Neutral grassland - semi-improved
B3.1	Calcareous grassland – unimproved
B3.2	Calcareous grassland – semi-improved
B4	Improved grassland
B5	Marsh/marshy grassland
C1.1	Tall herb & fen – bracken continuous
C1.2	Tall herb & fen – bracken scattered
C3.1	Other tall herb and fern - ruderal
D1.1	Dry dwarf shrub heath - acid
G2	Running water
J1.1	Cultivated/disturbed land – arable
J1.2	Cultivated/disturbed land – amenity grassland
J1.3	Cultivated/disturbed land – ephemeral/short perennial
J1.4	Cultivated/disturbed land – introduced shrub
J2.1.1	Intact hedge – native species rich
J2.1.2	Intact hedge – species poor
J2.3.2	Hedge with trees – species-poor
J2.4	Fence
J2.5	Wall
J2.6	Dry ditch
J3.6	Built-up areas - buildings
J4	Bare ground

Extended Phase 1 Habitat Survey
Cairngorms Local Development Plan

Site: Dalwhinnie H3

March 2011

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CONTENTS

Summary

1. As part of the process of considering the suitability of Site Dalwhinnie H3, for inclusion into the Local Development Plan, the Cairngorms National Park Authority (CNPA) has commissioned Landcare NorthEast to undertake a desktop study and initial ecological survey.

2. A desktop study and subsequent ecological survey was conducted at Site Dalwhinnie H3 in March 2011.

3. The proposed development site is located at NN 636841, behind Dalwhinnie Garage off the A889 and comprises approximately 0.48ha.

4. The main habitat is A1.1.1 Broad-leaved semi-natural woodland.

5. No notable plant species (those of UK conservation concern - see UK list of Vascular Plants of Conservation Concern http://www.ukbap.org.uk - or those listed on the Cairngorms LBAP list of priority species) were noted.

6. The site may provide bat and badger foraging habitat.

1.0 Introduction

Background

1.1 In order to make an assessment on ecological impacts of developments of sites that have been presented for inclusion in the Cairngorms Local Development Plan, CNPA require desktop studies and ecological surveys of each site to be undertaken.

1.2 With regard to this, an extended Phase 1 survey and habitat suitability assessment was conducted at Site Dalwhinnie H3,

1.3 The site is located at NN 636841, behind Dalwhinnie Garage off the A889, and comprises approximately 0.48ha.

1.4 The survey work was conducted by Steff Ferguson and Flora Grigor-Taylor, both experienced wildlife surveyors, chartered environmentalists and members of IEEM.

Existing Data

1.5 A review of the data held on the National Biodiversity Network (NBN) gateway was undertaken to identify species of conservation concern that have been recorded on the proposed development site.

1.6 NBN results

Occurring within the 10km square in which the site is located:
Goldeneye
Hen harrier
Black grouse
Atlantic salmon (100m record 150m south)
Woolly willow
Scottish wildcat
Cousin German (1km record 250m north)
Otter (2km 100m south of site)
Badger

At 2km square level:
Twite
Redshank
Lapwing

At 1km square level:
Daubenton's bat

Designated Sites

1.7 There are no statutorily designations on, or sharing a boundary with, the land surveyed.

2.0 Survey

Method

2.1 An ecological survey was undertaken on the site in March 2011.

2.2 A Phase 1 Habitat Mapping & Protected Species Survey, also referred to as an Extended Phase 1 Ecological Survey, was undertaken for the site. Standard Phase 1 methodology was used, including detailed target notes of notable plant species (those of conservation concern; also those listed on the Cairngorms LBAP list of priority species).

2.3 An assessment of the habitat suitability within the proposed development site for mammal species was also undertaken.

2.4 The standard optimal time to undertake an Extended Phase 1 Survey is between April and the end of September. The survey time of early March was therefore outwith the optimal time, and where potential for botanical interest was noted, further survey may be necessary to provide comprehensive information on a site.

2.5 The habitats are described by the use of target notes, annotated to the survey map (see Fig.1). Common species names and scientific names (Stace C (1997*) New Flora of the British Isles*. *Second Ed*. Cambridge University Press.) are given in the text below.

Results

2.6 The site is an area of wooded ground, positioned between the curtilages of two existing buildings. The site is open along its north boundary to a larger tract of mixed broadleaved woodland. A powerline and wayleave cross the site and the eastern section comprises an area of hardstanding, presumably associated with the adjacent garage.

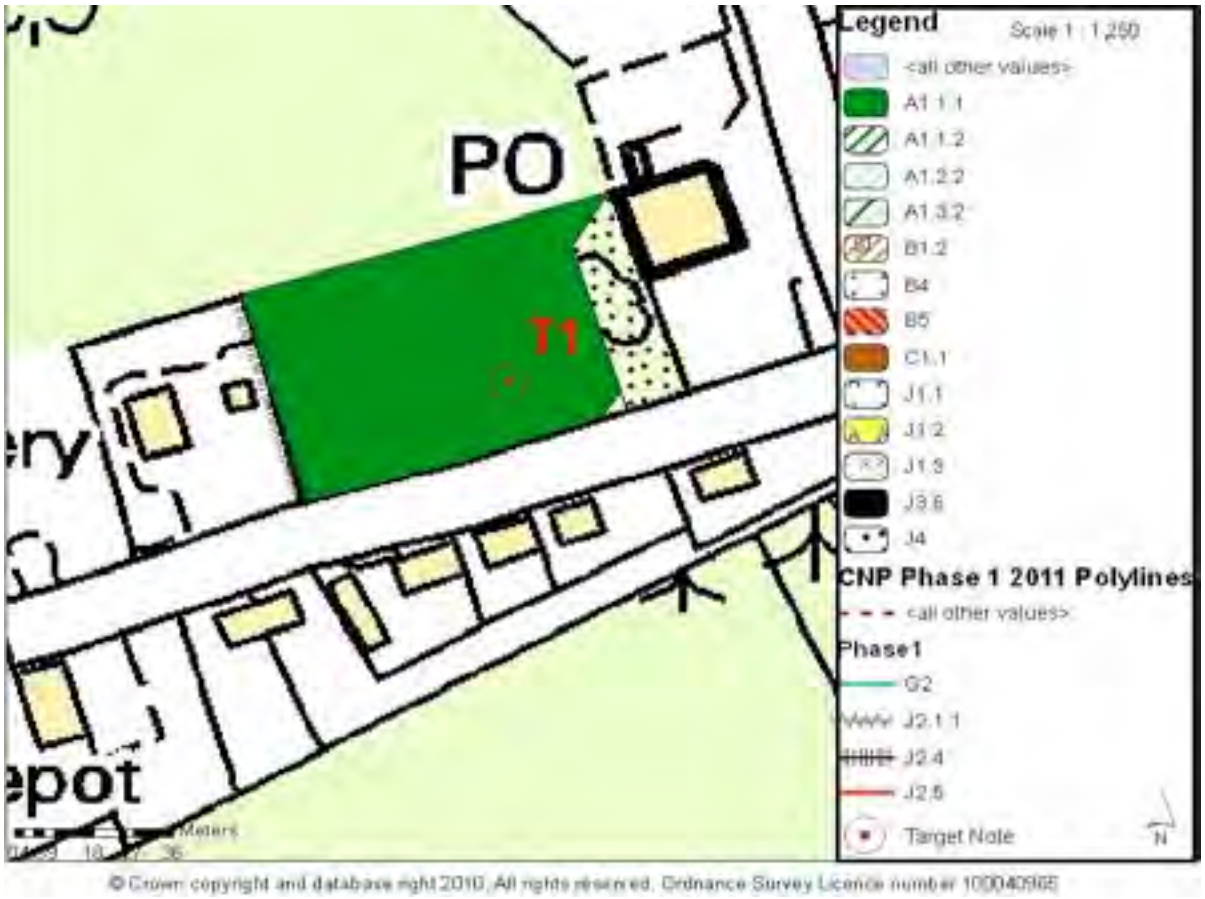
Vegetation

2.7 This site supports A1.1.1 Broad-leaved semi-natural woodland. Birch (*Betula* sp) is the dominant canopy species, interspersed with willow (*Salix* sp), rowan (*Sorbus aucuparia*) and occasional Scots pine (*Pinus sylvestris*). The canopy structure varies, with open scattered woodland giving way to patches of soft rush (*Juncus effusus*) and wet grassland species. Underplanting has taken place (c. 10 year old) below the canopy and natural regeneration of birch is evident along the wayleave.
A small patch of ruderal vegetation - rosebay willowherb (*Chamerion angustifolium*), raspberry (*Rubus idaeus*), etc - has colonised a corner of disturbed ground adjacent to the J4 hardstanding by the garage.

Fauna

2.8 No species of conservation concern and/or listed on the Cairngorms LBAP list of priority species were noted on site.

Fig 1 Survey Map



3.0 Assessment of Habitat Suitability for Mammals

3.1 The site itself offers no suitable breeding habitat for otter, water vole or red squirrel. No badger setts or bat roosts were observed. There may be foraging opportunity for badger and bats here.

4.0 References

JNCC. 1990. *Handbook for Phase 1 habitat survey − a technique for environmental audit.* 2007 edition. Nature Conservancy Council

Stace, C.A. 1997. *New Flora of the British Isles*. 2nd Edition. Cambridge University Press.

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APPENDIX 2 – SURVEY PHOTOGRAPHS

Open scattered birch woodland, interspersed with willow and rowan; A1.1.1 Broad-leaved semi-natural woodland

Eastern section, showing J4 hardstanding and adjacent garage

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